

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION

ATTACHMENTS

- Draft Construction Safety and Phasing Plan (CSPP)
- Draft Safety Risk Management Document (SRMD)
- Contaminated Soil and Groundwater Review Form
- Exemption Notice Pursuant to Hawaii Revised Statutes (HRS), §343-6(a)(2) and Hawaii Administrative Rules (HAR), §11-200.1-15
- Draft NPDES Permit Application Documents and SWPPP

**FEDERAL AVIATION ADMINISTRATION (FAA)
CONSTRUCTION SAFETY AND PHASING PLAN (CSPP)
FOR HILO INTERNATIONAL AIRPORT (ITO)**

HAWAI'I DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION (DOT-A)

DRAFT
TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
FOR
Hilo International Airport
STATE PROJECT NUMBER: AH1021-19



April 2022

Prepared by:
Jacobs Engineering Group
1003 Bishop St, Suite 1340
Honolulu, HI 96813

Table of Contents

Table of Contents.....	02
Points of Contact	05
Non-emergency Protocol Comm Flow Chart.....	07
Emergency Protocol Comm Flow Chart.....	08
Airport Emergency Protocol Comm Flow Chart.....	09
Project Scope	12
1. Coordination	12
a. Planning Meetings	12
b. Contractor Progress Meetings.....	13
c. Scope or Schedule Changes	15
d. Safety Meetings.....	16
e. Additional Coordination	16
f. Safety Plan Compliance Document.....	17
2. Phasing.....	19
a. General Description – Scope of Work	19
b. Phase Elements	19
c. Construction Safety Plan and Phasing (CSPP) Drawings	21
d. Work Shutdown Procedures	21
3. Areas and Operations Affected by Construction Activity	23
a. General Description.....	23
b. Identification of Affected Areas	23
c. Mitigations of Effects.....	24
4. Protection of Navigational Aids (NAVAIDs).....	26
a. Summary	26
5. Contractor Access	27
a. Site Security.....	27
b. Contractor Staging Area	28
c. Equipment Storage Area.....	28
d. Location of Stockpiled or Construction Material.....	28
e. Haul Routes	29
f. Requirements and Regulations Relating to the Operation of Motor Vehicles.....	30
g. Operation of Motor Vehicles within the AOA	31
h. Parking.....	32
i. Vehicle Identification including Lighting and Markings.....	33
j. Load Limits.....	34
k. Delivery and Parking of Construction Equipment and Vehicles	34
l. Requirements and Regulations Relating to Vehicle Drivers	34
m. Vehicle Driver Training.....	34
n. Two-Way Radio Communications	35
o. Airport Security	36

6. Wildlife Management	37
a. Trash.....	37
b. Standing Water.....	37
c. Tall Grass and Seeds	37
d. Poorly Maintained Fencing and Gates	37
e. Disruption of Existing Wildlife Habitat	38
7. Foreign Object Debris (FOD) Management.....	39
8. Hazardous Materials (HAZMAT) Management.....	41
9. Notification of Construction Activities.....	42
a. NOTAM Issuance	42
b. ARFF Coordination.....	42
c. DOT-A Coordination.....	43
d. FAA Coordination	43
1. Marking of Equipment and Restrictions on Cranes	43
e. Emergency Notification Procedures.....	44
10. Inspection Requirements	45
a. Daily (or More Frequent) Inspections.....	45
b. Final Inspections.....	45
11. Underground Utilities	46
a. Procedures for Locating and Protecting Existing Underground Utilities/Facilities in Excavation Area.....	46
b. Underground Service Alert.....	47
12. Penalties	49
13. Special Conditions.....	50
14. Runway and Taxiway Visual Aids	51
a. Marking Removal	51
b. AOA Closures (Runways, Taxiways, Ramps)	51
c. Temporary Lighting.....	51
d. Permanent Signage	52
15. Markings and Signs for Access Routes	53
16. Hazard Marking, Lighting and Signing.....	54
a. Equipment.....	55
17. Protection of Runway and Taxiway Safety Areas.....	57
a. Runway Safety Area (RSA)	57
b. Runway Object Free Area (ROFA)	57
c. Taxiway Safety Area (TSA)	57
d. Taxiway Object Free Area (TOFA)	57
e. Obstacle Free Zone (OFZ).....	57
f. Runway Approach/Departure Surfaces.....	58
g. Procedures and Equipment to Delineate Closed Construction Areas from Airport Operational Areas	58
18. Other Limitations on Construction	59
a. 18.1 Additional Restrictions	59

b. ITO Airport Operations	60
---------------------------------	----

Exhibit 1 - Procedures for Issuing NOTAMs and FOD Inspection at ITO

Appendices:

Appendix A	CSPP Drawings (Refer to Drawings GC001 – GC301 of the construction plan set)
Appendix B	Anticipated Construction Schedule
Appendix C	Jet Blast Analysis

Points of Contact

Contractor's Off-Site Contact Numbers:

TBD(xxx) xxx-xxxx (c)

Contractor's On-Site and Responsible Personnel Contact Numbers:

TBD(xxx) xxx-xxxx (c)

DOT-A/ FAA Contact Numbers:

Brant Yamamoto (DOT-A Project Manager) (DOTA-PM)(808) 838-8828 (o)
.....(808) 723-0219 (c)
Kandyce Watanabe (FAA Project Manager)(808) 312-6031 (o)
Dottie Poole (FAA Honolulu Control Facility Contact) (FAA-HCF)(808) 840-6146 (o)
.....(808) 840-6100 (alt)
FAA ITO Air Traffic Control Tower (ATCT), Daily 6:00am to 10:00pm(808) 961-3883 (o)
 ITO ATCT Tower Frequency118.1
 ITO ATCT Ground Frequency121.9
FAA ITO ATCT Manager (Alex Mikhalek) (ITO-ATC)(808) 935-4658 (o)
FAA ITO SSC (System Support Center) Manager(808) 961-6322 (o)
FAA Air Traffic Organization (Renee Ellorda) (FAA-ATO)(808) 334-8902 (o)
.....(808) 365-4947 (c)
FAA Honolulu Control Facility Air Traffic (24-hours)(808) 840-6201 (o)
.....(808) 840-6846 (o)
FAA Honolulu Control Facility Security Operation Center (SOC) (24-hours)
.....(808) 840-6511(o)
.....(877) 597-0965 *other*

Hilo International Airport (ITO) Contact Numbers:

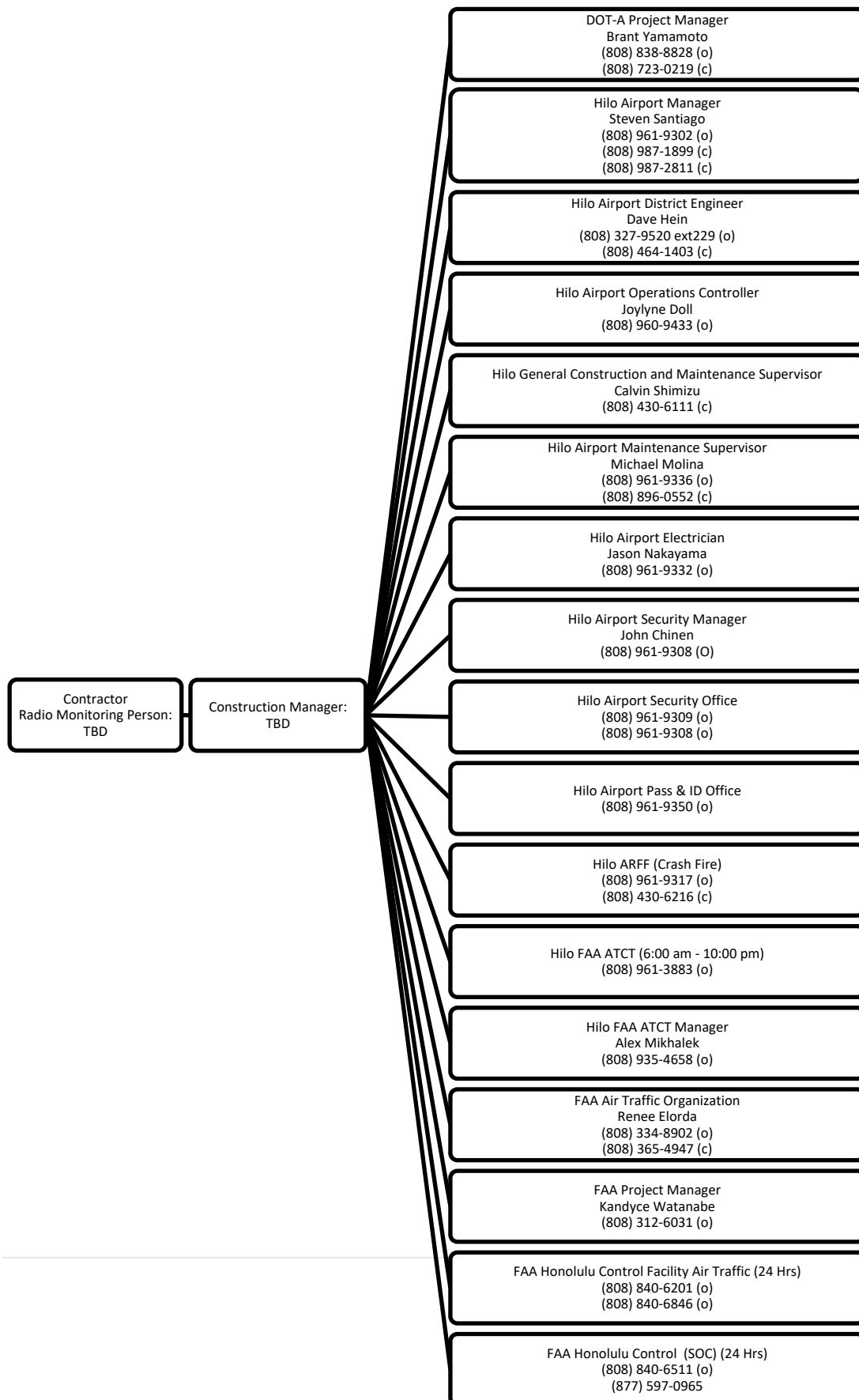
ITO Airport Manager (Steven Santiago) (ITO-AM)(808) 961-9302 (o)
.....(808) 987-1899 (c)
.....(808) 987-2811 (c)
ITO Airport District Engineer (Dave Hein) (ITO-DE)(808) 327-9520 ext229 (o)
.....(808) 464-1403 (c)
ITO Airport Operations Controller (ITO-AOC) (Joylyne Doll)(808) 960-9433 (o)
ITO General Construction and Maintenance Supervisor (Calvin Shimizu)
.....(808) 430-6111 (c)
ITO Airport Maintenance Supervisor (ITO-MS) (Michael Molina)(808) 961-9336 (o)
.....(808) 896-0552 (c)
ITO Airport Electrician (Jason Nakayama)(808) 961-9332 (o)
ITO Airport Security Office (5:30am to 9:00pm)(808) 961-9309 (o)
.....(808) 961-9308 (o)
ITO Airport Security Coordinator (Tiffinie C. Smith) (808) 961-9303 (o)
ITO Airport Contract Security (9:00pm to 5:30am)(808) 345-0488 (c)

ITO Airport Security Manager (John Chinen) (M-F, 8:00a to 4:00p).....(808) 961-9308 (o)
ITO Airport Pass & ID Office (M-F, 7:30a to 3:30p).....(808) 961-9350 (o)
ITO Airport Rescue & Fire Fighting (ITO-ARFF) (24-hours).....(808) 961-9317 (o)
ITO Airport Rescue & Fire Fighting On-Duty Captain (24-hours).....(808) 430-6216 (c)

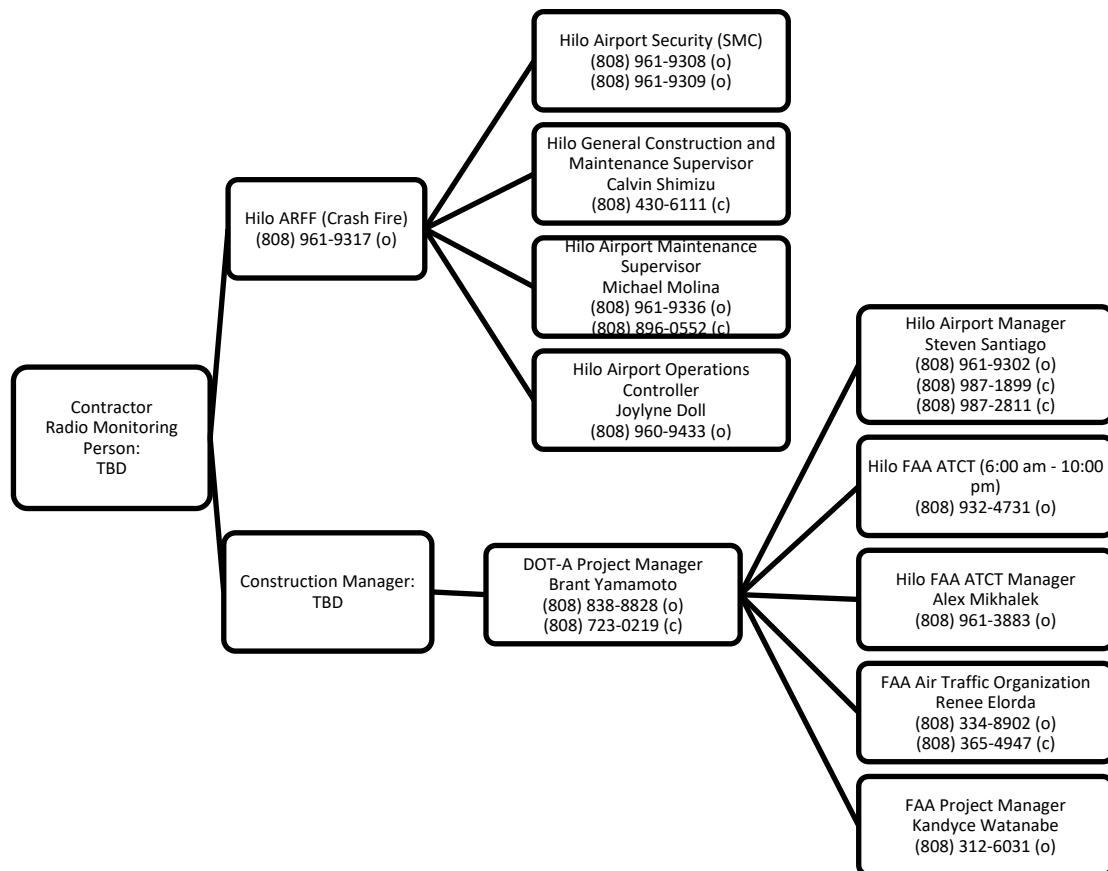
Other

Hawaii One Call Center1 (866) 423-7287
Hawaii Poison Center1 (800) 222-1222

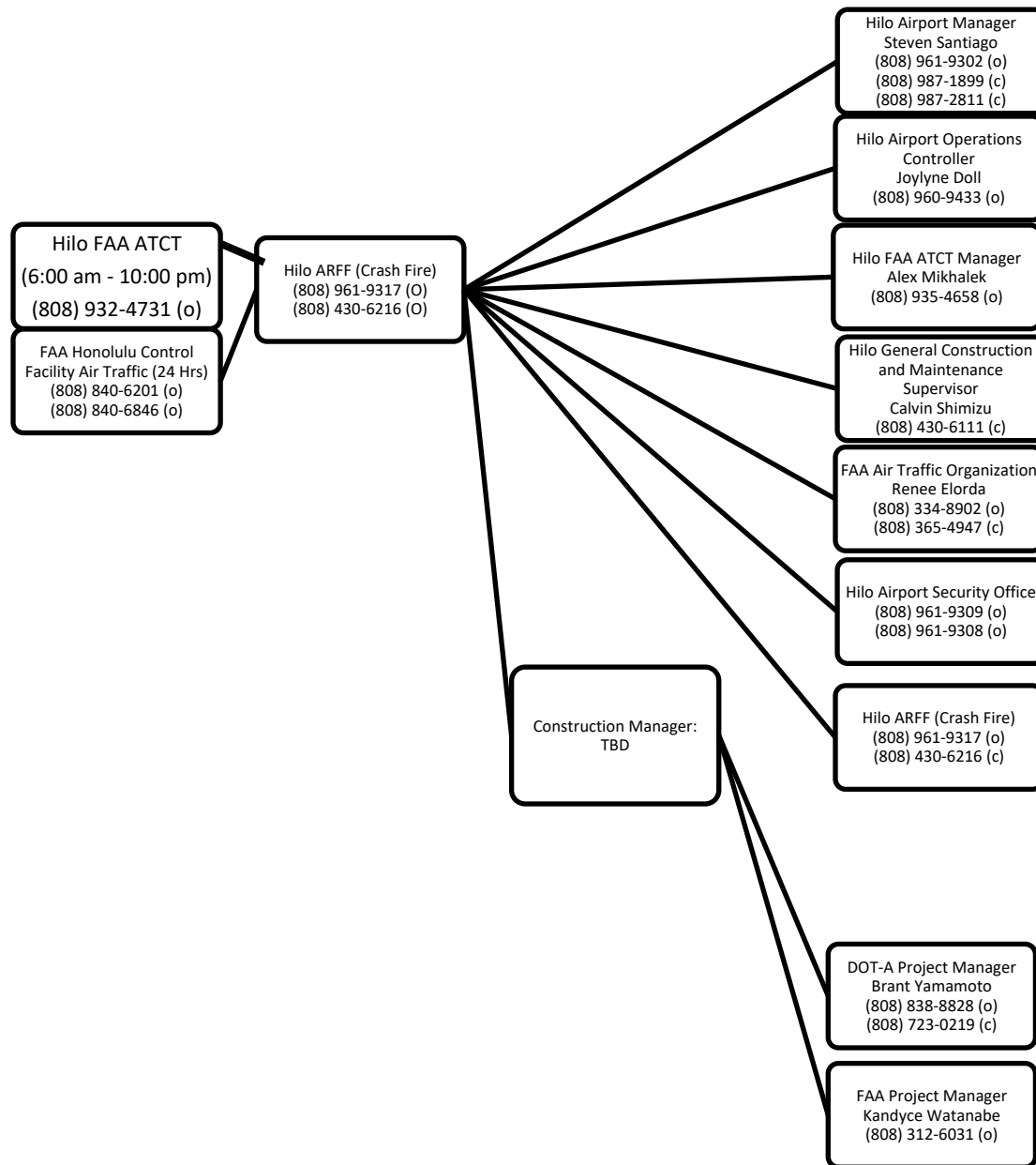
**NON-EMERGENCY PROTOCOL
COMMUNICATION FLOW CHART**



EMERGENCY PROTOCOL COMMUNICATION FLOW CHART



AIRCRAFT-EMERGENCY PROTOCOL COMMUNICATION FLOW CHART



Project Scope

The Taxiway and Runway Lighting Replacement Project at ITO will include a complete reconstruction of the existing runway and taxiway edge lighting system and installation of a counterpoise/lightning protection system, including:

- New LED runway and taxiway edge lights, base cans, and isolation transformers
- New LED airfield signs
- New concrete-encased conduits with counterpoise cable and ground rods
- New airfield lighting cable
- New constant current regulators
- Updates to existing Airfield Lighting Control and Monitoring System (ALCMS)
- Patching of asphalt shoulder pavement
- Pavement markings
- Drainage connections from airfield lighting system to new infiltration basins

1. Coordination

a. Planning Meetings

The Contractor, ***** (Contractor), shall schedule a preconstruction conference a minimum of 28 calendar days prior to the start of the construction. The preconstruction conference will discuss at a minimum: contract requirements, airport safety, contractor's proposed schedule of work, construction phasing and sequencing including associated dates and times of requested airfield closures, airport security, construction testing, and any other relevant project matters.

Prior to the start of and throughout the project, the Contractor shall attend weekly Project Coordination Meetings organized by the Resident Project Representative (RPR) (also referred to as the Engineer or Construction Manager (CM)) to discuss the scheduled construction activities, and include representatives from the following organizations:

- Resident Project Representative (RPR)
- Department of Transportation, Airports Division (DOT-A)
- Hilo International Airport (ITO)
- ITO Aircraft Rescue and Fire Fighting (ARFF)
- Federal Aviation Administration (FAA) Hilo Air Traffic Control Tower (ATCT)
- FAA Honolulu Control Facility (FAA HCF)
- Other airport stakeholders as appropriate

The topics of discussion shall include runway and taxiway closures; access point(s); vehicle route(s); other on-going construction projects within the proposed project vicinity; additional

notification/communication requirements prior to entering each area; work area barricade requirements, lighting, backup equipment and materials; emergency notification procedures and emergency contacts; temporary stockpile locations; procedures that must be followed should the Contractor be unable to reopen a portion of the airfield to aircraft operations at the end of scheduled night time work hours; and other topics as appropriate.

b. Contractor Progress Meetings

Attendance at weekly Project Coordination Meetings is mandatory during project construction. The Contractor must be prepared to discuss in detail their work, schedule, requested closures, and effect on operations for the upcoming three weeks. It may be necessary for the Contractor to modify their work and schedule to accommodate other projects or special operational needs at the airport. During runway or taxiway closures, Airport Management may require simultaneous work operations by multiple Contractors or Agencies to minimize the effect on airport operations.

Coordination of airfield activities is an important component of a safe operating environment. Progress meetings will be coordinated with the RPR and DOT-A Project Manager to discuss the progress of the project as a whole. During the project, the following coordination meetings will be held to discuss airfield activities:

- Pre-construction meeting
- Weekly Contractor progress meetings
- Pre-activity meeting and contingency planning meetings
- Daily coordination will take place between all involved parties
- The Contractor and subcontractor may be required to attend a daily airfield safety coordination meeting as determined by the RPR.

The Contractor shall schedule a pre-construction safety meeting prior to the start of construction activities within 24-hours of the first work shift of each construction phase. The Contractor, ITO Airport Management, and all sub-contractors active on the site must be represented at the meeting. This meeting is vital to identify any activity which may impact airport operations and to ensure the required Notice to Airmen (NOTAM) has been issued. The contractor, sub-contractors, and all other personnel involved on site during construction activities, shall review this CSPP prior to the meeting. The contractor shall conduct the meeting and provide for keeping the meeting minutes. A copy of the meeting minutes will be provided to all participants. The purpose of the meeting is to review any safety issues that have been identified, arrange for any changes that require coordination with airport operations, discuss changes in procedures and personnel, and resolve other problems that may develop.

During construction activities, the Contractor's representative shall attend all weekly Project Coordination Meetings organized by the RPR. During these meetings, the proposed construction work and closures shall be coordinated to minimize the construction impact to ITO Airport

operations. At each weekly meeting, the Contractor shall present an updated three-week work schedule with the proposed phasing/barricade plan(s). The three-week schedule shall include the construction activity for each day and the phasing/barricade plan (working hours, required runway closures, required taxiway closures, aircraft operating area (AOA) hauling route, proposed alternate aircraft route, etc.). All parties involved with the weekly meeting (RPR, DOT-A, FAA, ITO, ARFF, ATCT, HCF, Airline Representative, etc.) will be able to provide input and/or voice any concerns about the construction activity and/or proposed closures. The three-week schedule and phasing/barricade plan will be approved at the weekly meetings and reflected in the meeting minutes or may be approved by FAA Airports District Office (ADO) via email. If any changes to the three-week schedule and/or phasing/barricade plan are required, the Contractor will update and resubmit the plan for approval.

In general, all work which can be reasonably accomplished within existing planned airfield closures shown on the project phasing plans, should be planned and sequenced as such. However, in order to facilitate the construction phasing and transitions from phase to phase, work such as pavement marking, marking removal, and temporary airfield lighting and signage, covering, uncovering, or modification of airfield signs, and installation of sedimentation control devices, will be required in areas outside/beyond the associated phase barricade lines shown on the phasing plans. Some of this work, such as pavement marking and removal, may be able to be accomplished under a “work-in-progress” NOTAM, where construction activity is able to readily yield to approaching aircraft or as directed by ATC. Contractor shall notify all affected parties at least 3 weeks in advance of work-in-progress, including providing applicable draft NOTAMs to ITO, at the weekly project coordination meetings.

Some of the marking, lighting, BMP installation, or signage work will also require runway and/or taxiway closures, where the work cannot be safely conducted under work-in-progress NOTAMs. Any work, including pavement markings, within an active runway safety area requires closure of the runway. Work such as airfield lighting installation and circuiting, and airfield sign installations, within an active taxiway safety area, requires closure of the taxiway. The runway and taxiway closures required to transition between phases throughout the project, are generally shown on sheets GC211-GC272. Additional isolated short-duration runway or taxiway closures may also be required.

Any work which requires a runway or taxiway closure will require the contractor to produce a barricade plan showing, at a minimum, current airfield geometry, barricade locations, effective dates, working hours, required runway/taxiway closures, aircraft operating area (AOA) hauling route, proposed alternate aircraft routes, and required NOTAMs. Contractor may submit an RFI for guidance on operational needs and limitations on barricade placement, as well as to request available CAD drawings that may be used as the basis for the barricade plan. The proposed closure plan and alternate aircraft travel route(s) shall be submitted for approval and/or comments. DOT-A, ITO, FAA ADO, and FAA HCF must approve alternate routing for aircraft prior to scheduling any NOTAM(s) for this project. ITO will be responsible for the issuance of any NOTAM(s) for the project. Refer to exhibit 1 for procedures for issuing NOTAMs.

Any runway closure, whether shown on the drawings or not, shall be coordinated at least 30 days in advance. Any taxiway closure, whether shown on the drawings or not, shall be coordinated at least 3 weeks in advance.

Closure of runways may also be subject to ceiling and visibility minimums. Coordination with ITO, ITO ATCT and FAA HCF will be required to confirm that weather conditions are suitable before the runway(s) may be closed. Refer to Section 13 for additional information.

In addition to the Project Coordination Meetings, the contractor shall attend a weekly Owner/Architect/Contractor (OAC) meeting. The meeting shall be organized by the RPR and located at ITO. If available, DOT-A will provide teleconference information for individuals unable to attend the weekly meeting in person. A meeting agenda will be provided by the RPR, DOT-A, or Contractor, and shall cover Operational Safety, Project Progress, Request(s) for Information (RFI), Submittals, Change Orders, and general discussion items.

Prior to starting any work shift (day or night work), a daily meeting will be held by the construction crew. The meeting shall be led by the Superintendent, Foreman, and/or On-Site Supervisor, and shall include discussion of the work to be performed during that shift, any potential safety issues, the approved barricade plan, closed AOA sections, AOA hauling routes, and construction goals. A weekly safety meeting will be held at the start of each week. As required by occupational safety and health administration (OSHA), the safety meetings shall be documented and recorded. As part of the weekly safety meeting, the construction crew will take time to share any experiences, safety issues experienced the previous week (lessons learned), related to the safety topic of the week.

The contractor shall provide written notice, and discussion at the weekly project coordination meetings, of all upcoming changes to the airfield, including temporary taxiway realignment, and taxiway closures. The specific dates for these closures shall be outlined with approximate dates on the overall project schedule within 30 days of notice to proceed, and then the exact date shall be scheduled a minimum of 30 days in advance. Contractor shall make all reasonable efforts to hold these dates once scheduled, unless delayed by weather or other factors outside of the contractor's control.

c. Scope or Schedule Changes

The contractor shall prepare a detailed schedule, based on the allowed contract days duration for each phase, and the date of the Notice to Proceed, and submit to the RPR prior to starting work per the specifications. Changes to the schedule submitted shall be coordinated with DOT-A, ITO, FAA ADO, ITO ATCT, and FAA HCF at least one week in advance. It is possible that Contractor field activity may be canceled for the following reasons:

- Inclement weather; work shall be canceled for the night if heavy consistent rain or wind conditions is predicted to occur prior to the night of field activity.
- Irregular airport operations or emergencies.

The Contractor shall make a Go/No-Go decision a minimum of 2 hours before scheduled work or runway/taxiway closure. In the event of cancellation, work shall be rescheduled for the next allowable runway or taxiway closure date and time per the phasing plans. The Contractor will inform all involved parties of work cancellation; otherwise it is generally assumed the weather will be satisfactory. Delays due to inclement weather or irregular airport operations will extend the schedule accordingly.

d. Safety Meetings

All Contractor personnel working within or adjacent to the AOA shall receive safety training prior to commencement of work. The safety training shall cover but is not limited to the following:

- Aircraft jet blast
- Aircraft versus vehicles (Right of Way)
- Airfield layout including signs, marking and lighting
- Airfield driving rules within movement and non-movement areas
- Communicating with ATCT
- Maintaining airport security
- Closed or prohibited areas
- Foreign Object Debris (FOD)
- Wildlife management procedures

Personnel without the proper safety training will not be allowed within the AOA without a qualified ITO licensed escort. Personnel without movement area training will not be allowed in the RSA.

e. Additional Coordination

Early coordination with FAA-ATO and ITO is required to schedule any airport/airfield closures (taxiway closures, runway closures, etc.) on this project, with advance notice as stated earlier.

The proposed closures shall be provided on the three-week schedule and illustrated on the phasing and barricade plan. The RPR, DOT-A, FAA ADO, FAA HCF, FAA-SSC (for navigational aids (NAVAIDs)), ITO, ITO ATCT, ARFF, Airline Representative, etc. will be able to provide any comments or concerns regarding the proposed closure date and/or closure plan. The three-week

schedule and phasing/barricade plan will be approved at the weekly meetings, and reflected in the meeting minutes or approved by FAA ADO via email.

If any change to the three-week schedule and/or phasing/barricade plan is required, the Contractor will update and resubmit for approval prior to starting any work. The Contractor shall plan and conduct all operations in such a manner so as to maintain a smooth, safe, and uninterrupted flow of aircraft operations and vehicular traffic around the airport.

In cases where two different runways must be closed simultaneously, the NOTAMs and closure times shall provide a 30-minute offset between closure of one runway and the next, and similarly for reopening of each runway. E.g., if closing Runway 8-26 at 2200, Runway 3-21 closure to begin at 2130.

FAA Form 7460-1, Notice of Proposed Construction or Alteration, shall be filed with the FAA for this project and is required for any construction or alteration associated with any project at or near the airport. Form 7460-1(s) have been filed in advance with the FAA for this project, with allowable equipment heights as stated in the plans, and the determinations stating the conditions of approval are available for Contractor's review. It is the contractor's responsibility to verify that Form 7460s and Determinations by the FAA are active and not expired, that the locations and heights submitted cover the work required, and that all requirements of the determinations are being met. Additional FAA Form 7460-1, Notice of Proposed Construction or Alteration, shall be filed as required for any work not covered, or to extend or renew the notice with the FAA. These determinations are typically valid for 2 years.

The Contractor shall request and review the ITO Contractor's Training Guide (March 16, 2022) and become familiar with all requirements.

Prior to excavation in the vicinity of existing underground facilities, the Contractor shall notify the RPR and the respective authorities representing the owners and agencies responsible for the associated facilities, not less than three (3) working days and not more than five (5) working days, prior to excavation so that a representative of the owner(s) or agencies can be present if they so desire.

It is required for the Contractor to provide a list of utility companies and representatives whose facilities may be impacted by the project.

f. Safety Plan Compliance Document

This CSPP is a draft document, and provides minimum requirements and best information available during the planning and design of the project. **The Contractor shall submit a Safety Plan Compliance Document (SPCD) to the airport operator and RPR prior to receiving a Notice to Proceed (NTP). The SPCD shall conform to requirements found in AC 150/5370-2, Operational Safety on Airports During Construction (latest edition) and project specifications, including this CSPP.**

The Contractor is also directed to the ITO Taxiway and Runway Lighting Replacement Project Safety Risk Management Document (SRMD). A safety risk assessment was performed in accordance with the FAA Airports Safety Management System recommendations, and included industry experts, representatives from the airport, tenants, operators, and members of various FAA lines of business. The SRMD documents the review of this CSPP and existing controls, the hazards and risk levels identified, and any required mitigations. Compliance with the requirements of this CSPP is critical to the safe execution of this project, and to ensure that additional hazards are not introduced from those that have been identified in the SRMD.

End of Section 1

2. Phasing

a. General Description – Scope of Work

The purpose of this project is to replace aging runway and taxiway edge light fixtures, base cans, and conduit, and install a new counterpoise system for lightning protection. Existing guidance signs will also be replaced with LED signs, replacing regulators at the existing airfield lighting vault, and conduit connections to infiltration basins from base cans, hand holes, and manholes. A portion of this project will remove trees and brush on some areas of the airport property.

Excavation will generally be limited to trenching for conduit and base cans with depth ranging from 2 to 3 feet. Existing electrical hand holes and/or manholes will be removed or permanently abandoned which are typically expected to be approximately 4 feet deep, but may be up to 8 feet deep. In soil areas, where these structures are removed, the hole will be backfilled, or in pavement areas, they will be filled with lean concrete and the pavement surface restored. The project will also include directional drilling for conduit installation, at depths up to approximately 10 feet. All soils from excavation/trenching are expected to be backfilled or disposed on site. All millings are expected to be disposed of off site. De-watering of the existing conduits, base cans, and hand holes is anticipated, to allow for removal and pavement patching.

b. Phase Elements

The Contractor shall perform each phase of the work within the periods of time and/or duration specified. The Contractor shall provide all labor, material, and equipment, including standby equipment necessary to guarantee construction and completion of work within the constraints and timeframe(s) specified for the individual phases and the overall project, and within the requirements of the contract documentation. Liquidated damages in the amounts specified in the General/Special Conditions, shall be assessed if the Contractor fails to complete any phase within the specified allowed duration. The terms “work area”, “zone”, and “phase” may be used hereafter to describe either the period of time and/or the area in which certain work is to be done.

The Contract Time for completion of the work under this Contract shall be 682 calendar days and will consist of the phases listed in Table 3-1 – Construction Phase Duration.

Table 3-1 – Construction Phase Duration				
Phase Name	Location	Work Hours	Phase Duration (Calendar Days)	Contract Days (Total)
Preconstruction	Preconstruction activities	N/A	149	149 (from Construction NTP)
Phase 1	East apron of international terminal, Taxiway F, and Taxiway A between the RSA of Runway 26 and Taxiway E	2200 -0600	63	212 (from Construction NTP)
Phase 2A	West apron of terminal, Taxiway E between apron and the RSA of Runway 8-26	2200-0600	33	245 (from Construction NTP)
Phase 2B	Taxiway A between Taxiway E and M, Taxiway D outside the RSA of Runway 8-26, Taxiway M including the east part of the cargo apron, and the infield between the vault and Taxiway A	2200-0600	58	303 (from Construction NTP)
Phase 3	Taxiway B between cargo apron and the RSA of Runway 8-26 including the west part of the cargo apron, Taxiway A between Taxiway M and the TLOFA of Taxiway C, and Taxiway C between the RSA of rwy 8-26 and the TOFA of Taxiway A	2200-0600	57	360 (from Construction NTP)
Phase 4	Runway 8-26 between the RSA of 3-21 and Taxiway A	2200-0600	128	488 (from Construction NTP)

Phase 5	Runway 8-26 between the RSA of 3-21 and the threshold of Runway 08 and Taxiway A connector	2200-0600	20	508 (from Construction NTP)
Phase 6	Intersection of Runway 8-26 and Runway 3-21	2200-0600	39	547 (from Construction NTP)
Phase 7	Taxiway I, Taxiway J, Taxiway K, Taxiway L, Taxiway C south of the TOFA of Taxiway A, Taxiway C north of the RSA of Runway 8-26, and Runway 3-21 outside the RSA of Runway 8-26 and TOFA of Taxiway A	24/7	124	671 (from Construction NTP)
Final Inspection and Punchlist	N/A	N/A	11	682 (from Construction NTP)

c. Construction Safety Plan and Phasing (CSPP) Drawings

Refer to sheets GC001 through GC272 of the construction plan set for the phasing plans that detail the limits of the work and requirements for each phase. No activity is permissible within the RSA while the runway is open to aircraft operations. No activity is permissible within the taxiway object free area (TOFA) while taxiway or taxilane is open to aircraft operations unless under approved pull-back operations. Jet blast considerations shall be reviewed and discussed prior to starting the work. ARFF and ITO travel routes shall be kept clear at all times. Work within the RSA/TOFA shall only be accomplished during closure of the runway, taxiway, or taxilane during hours that have been previously coordinated and approved by ITO and FAA during Project Coordination Meetings, and as required by this CSPP.

d. Work Shutdown Procedures

Prior to any approved closure, the Contractor shall contact the ITO Airport Operations Controller (AOC) or Airport Maintenance to confirm NOTAM issuance. Refer to exhibit 1 for procedures for issuing NOTAMs. The AOC or Airport Maintenance will coordinate and notify ATCT/HCF to deactivate NAVAIDs, runway approach lights, and/or runway(s) and taxiway(s) edge lights. Airport Maintenance and the Contractor shall place illuminated X's at both ends of each runway that is scheduled to be closed along with low-profile barricades at the locations designated on the approved barricade plan. The RPR and ITO shall retain the right to shut down contractor operations in any work area if these conditions are not being met.

Prior to re-opening of runways or taxiways the Contractor shall contact ITO AOC or Airport Maintenance at least 30 minutes prior to the scheduled re-opening to request a FOD inspection. Refer to exhibit 1 for procedures for FOD inspection. To reopen a runway or taxiway/taxilane closed for construction for any period, all equipment and materials shall be moved outside of the RSA and TOFA. No stockpiles shall remain within RSA, ROFA, or TOFA, grading shall be covered in a manner to prevent dust and rock movement due to jet blast, or other objectionable movement of material onto the open runway or taxiway/taxilane, and the adjacent runway or taxiway pavement shall be swept and cleaned of all construction debris.

Once ITO has completed the FOD inspection and cleared the runway or taxiway for opening, the Contractor shall remove all barricades and illuminated X's. The Contractor shall then contact the AOC or Airport Maintenance to inform them that work is complete, and the runway and/or taxiway may be reopened.

Work shutdown procedures and runway/taxiway reopening for each night's work shall be as follows:

- Remove any materials, equipment, tools, trash, and any other items from the work area not specifically approved to remain.
- Clean all debris and surface laitance from work locations.
- Contractor shall perform foreign object debris (FOD) checks in all work areas and on all taxiways used as haul routes.
- The Contractor shall request a FOD inspection from ITO AOC.
- Once the ITO FOD inspection is complete and cleared for opening, the Contractor shall remove the traffic control barricades, and lighted runway closure "X"s if applicable.
- The Contractor shall call ITO AOC to inform them that work is complete, and the runway and/or taxiway may be reopened. Refer to exhibit 1 for procedures for FOD inspection.

End of Section 2

3. Areas and Operations Affected by Construction Activity

a. General Description

This project will affect almost all areas of the existing airfield at ITO. The work is divided into 7 construction phases, which have been designed to allow the airport to continue operation throughout the construction. Most of the work will be accomplished under nighttime runway and taxiway closures, when traffic is lowest.

b. Identification of Affected Areas

The specific operational impacts required for each construction phase are summarized in tables on the construction phasing plans, sheets GC211 through GC272.

Table 4-2 – Operation Effects		
Project	ITO Taxiway and Runway Lighting Replacement	
Phase	Phases 1-7	
Scope of Work	See section 2.a.	
Operational Requirements	Normal (Existing)	Phase 1-7 (Anticipated)
Runway 8-26 AAC/ADG	AAC D, ADG V	Same
Runway 8 Approach Visibility Minimum	NOT < 3/4 mile	Same, except when closed (Phase 4,5, and 6)
Runway 26 Approach Visibility Minimum	NOT < 3/4 mile	Same, except when closed (Phase 4 and 5) or temporarily relocated threshold (Phase 6)
Runway 8 Declared Distances	9800	Same, except when closed (Phase 4 and 5) or temporarily relocated (Phase 6. See sheets GC261 and GC262)
Runway 26 Declared Distances	9800	Same, except when closed (phase 4 and 5) or temporarily relocated (Phase 6. See sheets GC261 and GC262)
Runway 8 Approach Procedures	VOR/DME – A & VOR-B (both circling approaches)	Same, except when closed (Phase 4, 5, and 6)
Runway 26 Approach Procedures	VOR/DME – A, VOR-B, VOR/DME RWY 26, RNAV RWY 26, ILS RWY 26.	Same, except when closed (Phase 4 and 5) or temporarily relocated (Phase 6. See sheets GC261 and GC262)

Table 4-2 – Operation Effects		
Project	<i>ITO Taxiway and Runway Lighting Replacement</i>	
Runway 8 NAVAIDs	PAPI, ODALS	Same, except when closed or temporarily relocated: PAPI, ODALS OTS (Phase 6)
Runway 26 NAVAIDs	PAPI, MALSR, ILS	Same, except when closed or temporarily relocated: LOCALIZER OTS (Phase 6)
Operational Requirements	Normal (Existing)	Phase 1-7 (Anticipated)
Runway 3-21 AAC/ADG	AAC B, ADG II	Same
Runway 3-21 Approach Visibility Minimum	NOT < 1 MILE	Same, except when closed: Phase 3, 6, 7
Runway 3-21 Approach Visibility Minimum	NOT < 1 MILE	Same, except when closed: Phase 3, 6, 7
Runway 3 Declared Distances	5600	Same, except when closed: Phase 3, 6, 7
Runway 21 Declared Distances	5251	Same, except when closed: Phase 3, 6, 7
Runway 3 Approach Procedures	No instrument approaches	Same, except when closed: Phase 3, 6, 7
Runway 21 Approach Procedures	VOR/DME-A, VOR-B, RNAV RWY 21	Same, except when closed: Phase 3, 6, 7
Runway 3 NAVAIDs	VASI	Same, except when closed: 3 VASI (Phase 3, 6, 7)
Runway 21 NAVAIDs	NONE	Same, except when closed: N/A

c. Mitigations of Effects

Work located in the runway safety areas requiring runway closures or shortenings will be completed any day of the week during nighttime work hours, except during phase 7. All contractor equipment, materials, vehicles, and personnel shall be removed from the construction area and any excavations shall be filled flush to grade prior to reopening the runway.

Work within the remaining phases that do not require runway closures or shortenings will be completed any day of the week during nighttime taxiway closures. Additional times may be available for the Contractor to work in isolated cases, but these timeframes will be subject to approval by ITO. All contractor equipment, materials, vehicles, and personnel shall be removed from the construction area and the taxiway

restored to a safe condition before the taxiway pavement is reopened. Open excavations will be allowed to remain in place as long as they are located beyond all taxiway and runway safety areas, and are secured to prevent FOD due to jet blast or wind.

End of Section 3

4. Protection of Navigational Aids (NAVAIDs)

a. Summary

- Electronic NAVAIDs (ILS, LOC/DME, VORTAC, Glide Slope, etc.) and their critical areas shall be protected at all times during the construction work. Requests for NAVAIDs shutdown for all runway closures on this project will be coordinated with FAA, HCF, and/or ATC at the ITO weekly Project Coordination meeting. For work on Runway 8-26 and 3-21, any electronic NAVAID(s) impacted by the work on Runway 8-26 and 3-21 will be taken offline when the runway is closed, and reactivated when the runway is reopened. HCF will be responsible for coordinating the turning off/on all electronic NAVAID(s) for the runway closures.
- The Contractor will ensure that all runway lighting, taxiway lighting, and NAVAIDs are undamaged by construction operations. Parking of equipment or vehicles near electronic NAVAIDs will not be permitted. The location of all NAVAIDs and clear distances are shown on the sheet GC301. When possible, the Contractor shall remain clear from the electronic NAVAIDs critical areas, thus minimizing interference with signals essential to air navigation.

End of Section 4

5. Contractor Access

a. Site Security

The airport is operated in strict compliance with FAA and Hilo Transportation Security Administration (Hilo TSA) regulations, which prohibit unauthorized persons or vehicles in the AOA. Equipment and personnel will be restricted to the work area as defined in the CSPP Plans (GC211-GC272). Any violation by the Contractor or subcontractors will be subjected to penalties imposed by FAA and/or Hilo TSA.

The Contractor shall conform to the FAA air carriers' Standard Security Program (SSP) (Title 49 CFR Part 1542, Airport Security) employee background check requirement as administered and enforced by the airport manager. Public law 106-528 requires that all new employees comply with the "criminal history record checks" by being fingerprinted.

The Contractor shall obtain Hilo security badges for employees expected to work within the AOA. Workers shall abide by requirements dictated by the badging agreement. These include, but are not limited to, regulations for entering/exiting, operating vehicles on the AOA, escorting procedures, and visibility requirements.

For the Contractor Staging Area, access to the airport AOA will be through **Gate 6A adjacent to the air traffic control tower for phases 1 – 4 and gate 29 adjacent to air service Hawaii located at 61 Old General Lyman Field for phases 5-7**; the gate will be unlocked for entry and exit of contractor personnel only. The gate will remain locked at all other times. The contractor will submit a request for a key of the vehicle gate lock to be used for the duration of construction. Contractor locks shall not be placed on gates. Airport locks shall be used. The Contractor shall provide security guards approved by ITO Management at gates used by the Contractor for vehicle ingress and egress through the airport perimeter security fences. The Contractor shall stop any unauthorized person from entering the airport through these gates. Gates shall be closed at all times when not in use. Airfield security shall be maintained at all times.

- All vehicles must have an approved logo or company name displayed on both sides of the vehicle.
- Unless a gate guard(s) is performing guard duty, the gates must be secured and locked.
- No one is allowed to enter the AOA unless the preceding conditions are met.
- Checking all incoming individuals and vehicles for airport authorized identification (AOA badges) and vehicle permits to prevent unauthorized entrance onto the AOA.
- Comparing the name on the identification badge for each individual entering through the gate with an Airport-provided "stop list." If a person's name is on the stop list, entry shall be denied, and the Hilo Security Office immediately notified.

- Conducting vehicle searches to ensure weapons, explosive devices, and other prohibited items are not allowed into the secured area of the airport. If weapons or other prohibited items are found, the guard shall(s) prevent entry and immediately notify the Contractor and the Hilo Security Office.
- Ensuring that the security gates are closed when not actively being used to prevent security breaches.

b. Contractor Staging Area

Contractor staging areas as depicted on the contract drawings shall be used to store all idle equipment, supplies and construction materials. Storage shall not interfere with operations areas. When not in use during working hours, and at all other times, all material and equipment shall be stored at the storage site indicated on the drawings unless prior approval is provided by the RPR and DOT-A. Contractor shall submit a plan to the RPR for approval of any modifications to fencing required to secure the staging areas.

c. Equipment Storage Area

Storage of equipment and materials shall be in the Contractor's staging areas as shown on Drawing GC101 in Appendix A. The Contractor shall be solely responsible for the security of the lay-down area and shall be liable for any damage caused to such premises. The Contractor shall restore the staging and storage areas and adjacent areas to their original condition prior to final acceptance of the work.

When required, Best Management Practices (BMP's) will be installed around the staging/stockpile areas as approved by DOT-A and the RPR.

d. Location of Stockpiled or Construction Material

The stockpile and staging area(s) shall not be permitted within the RSA, obstacle free zone (OFZ), and if possible, not permitted within the runway or taxiway object free areas (OFA). Stockpiling materials and/or parking equipment near electronic NAVAIDs or within twenty (20) feet of the AOA fence line shall not be permitted.

The Contractor staging area shall be used to store all idle equipment, supplies, and construction materials. Storage shall not interfere with operational areas. The Contractor shall not store materials or equipment in areas in which the equipment or material will affect the operation of FAA electronics equipment. Any approved storage of equipment shall not present a line of sight problem with FAA ATCT, flagman operations, vehicle traffic, or aircraft.

Stockpiling of material will only be allowed at the Contractor's staging areas. The Contractor shall be responsible for any blown debris or dust from stockpiles. The stockpile height is

restricted to 20 feet, or as required by FAA Form 7460-1 determination. However, barricades with red flashing lights shall be installed where potential conflicts with aircraft or ground vehicular traffic exists.

Stockpiles shall not be allowed to become wildlife attractants, refer to Section 6.

Stockpiles shall not be allowed to become a FOD hazard, refer to Section 7.

e. Haul Routes

Haul route for vehicles delivering materials to, or hauling material from, the work sites shall use the gates and haul routes as shown on the plans. The phasing plans clearly delineate how the Contractor will access the airfield including preferred haul and travel routes.

Roads designated as contractor haul routes may be used by other airport vehicles, contractors, and the general public (along public roads). The contractor shall not interfere with other vehicle traffic and shall yield to emergency vehicles and aircraft along any of the airport or public roads. The contractor shall provide all flagging, signing, lighting, etc. required by the city, airport, county, and state to provide all reasonable safety measures to protect all persons utilizing the AOA service road, the haul road, and all public roads used by the Contractor. The Contractor shall obey all vehicular weight and speed limits established as posted on airport property and public streets.

All vehicles and equipment shall be kept within the work areas established for that work shift unless traveling to or from the site. Under no circumstances shall vehicles be parked, or equipment stored outside of the work areas or staging areas.

Runway pavement shall be kept clear of all parked vehicles, equipment, tools, or parts at all times, including work hours.

Any equipment temporarily parked at a work site for use during the current work shift shall be properly marked, parked outside all active safety areas, and within the barricaded work site. Equipment shall not exceed the heights specified in the plans and/or in the approved Form 7460-1 determination(s) and shall be left in the lowest possible profile position when not in use.

All airfield markings along haul routes and areas adjacent to the work area shall be maintained by the Contractor to the satisfaction of the RPR for the duration of the project.

Trucks delivering asphalt pavement or concrete shall wash out chutes, beds, mixers, etc. only at locations previously approved by the RPR and DOT-A.

Locations of access roads and routes are approximate. Exact routes shall be coordinated with the RPR to avoid surface utilities, navigational equipment, TOFAs, RSA, etc. All vehicles and equipment must access the work area along designated and pre-approved access routes.

Contractor's vehicles shall not deviate from approved haul routes specified on the plans or as directed by the RPR. Contractor shall monitor and control FOD on the haul route at all times using powered vacuum sweepers.

When driving from unpaved areas to paved areas, the Contractor shall implement FOD check-points for vehicle operators to check and remove FOD on the tires to prevent tracking of FOD to aircraft operational areas.

f. Requirements and Regulations Relating to the Operation of Motor Vehicles

During the duration of the work, the Contractor shall recognize and abide by all rules, regulations, and controls, as modified by federal regulations.

In addition to the federal regulations, the RPR and DOT-A is empowered to issue such other instructions as may be deemed necessary for the safety and well-being of airport users or otherwise in the best interest of the public.

Vehicles entering the AOA must comply with AC 150/5210-5, Painting, Marking, and Lighting of Vehicles Used on an Airport, (latest edition). Contractor vehicles and equipment, except those under escort, shall be marked with the company name or logo on both sides in no less than 4-inch high letters of a contrasting color. Markings may be painted on the vehicle, or magnetic signs may be used. Construction vehicles under escort are the responsibility of the properly equipped lead vehicle and are required to have a flag or beacon.

All contractor vehicles and equipment operating in the AOA must display orange and white checkered flags or flashing yellow beacons during daytime use and flashing yellow beacons during nighttime use. The flag shall be on a staff attached to the vehicle and shall be at least a 3-foot square having a checkered pattern of International Orange and White squares at least one (1) foot on each side. Flags and beacons must be mounted on the vehicle where they are visible from any direction.

Each contractor, including each contractor/subcontractor employee, who operates a ground vehicle on any portion of the AOA at Hilo must be familiar with and comply with:

- ITO Airport's AOA vehicle rules and regulations
- ITO Airport's procedures for the operation of ground vehicles
- The consequences of noncompliance with Hilo Airport's rules and regulation and/or procedures for the operation of ground vehicles as shown on plans

g. Operation of Motor Vehicles within the AOA

Motor vehicle operations within the vicinity and on the airport, premises shall be governed by the provisions of the Hawai'i state motor vehicle codes and traffic direction procedures and signs and signals for turns. Lights and safe-driving precaution shall be in conformity therewith. In addition, motor vehicles shall conform to all special regulations prescribed by the airport.

Traffic on perimeter roads, enplaning and deplaning areas (ramp areas), public thoroughfares, and parking areas of the airport is limited to those vehicles properly licensed to operate on public streets and highways or as approved by ITO.

Every person operating motorized equipment of any character on any area shall operate the same in a careful and prudent manner and at a speed posted or fixed by this section or the general provisions and at no time greater than is reasonable and proper under the conditions existing at the point of operating, taking into account weather, traffic and road conditions, view and obstructions, and shall be consistent with all conditions so as not to endanger the life, limb or property, or the rights of others entitled to the use thereof.

The Contractor shall be aware that operations of aircraft in an adjacent area will result in jet blast occurring in the work area. Contractor vehicles, equipment, and supplies must remain inside the work area established for the work shift unless in transit to or from the site. All vehicles and equipment must access the work area along designated access roads/haul routes.

All motor vehicles that enter the AOA shall possess exhaust system that are protected with screens, mufflers, or other devices adequate to prevent the escape of sparks or the propagation of flame.

All vehicles within the AOA shall be equipped with reflectors or lights on both front and rear ends and on the sides.

All vehicles and equipment used on the AOA must display an orange and white checkered flag or a flashing yellow beacon during daytime work, and a yellow flashing beacon during nighttime work.

No person shall operate any motor vehicle or motorized equipment in the AOA of the airport unless such motor vehicle or motorized equipment is in a safe and mechanically reliable condition for such operation.

Any person operating equipment within the AOA shall, in addition to this section, abide by all existing FAA and other governmental rules and regulations and shall at all times comply with any lawful signals or direction of airport employees. All traffic signs, lights, and signals shall be obeyed.

No person shall operate any motor vehicle or motorized equipment on the aircraft movement area or non-movement area(s) of the airport at a speed in excess of the posted (established) speed limit of 15 mph unless otherwise noted or when conditions require a reduction in speed. Designated motor vehicle drive lanes shall be utilized where provided unless specific direction is given by the RPR or ITO.

No person operating a motor vehicle or motorized equipment within the AOA shall in any way hinder, stop, slow, or otherwise interfere with the operation of any aircraft. Aircraft shall have the right-of-way at all times.

All aircraft and emergency vehicles have priority over Contractor vehicles. Contractor vehicles shall yield right-of-way to aircraft and emergency vehicles. Contractor shall ensure that under no circumstances will any Contractor or other vehicle associated with the project pass beneath any part of an aircraft or loading bridge, or block the access to any parking gate or delay any aircraft movement.

Vehicles shall remain within established drive lanes. It is prohibited to use active runways or taxiways or adjacent field areas unless specifically allowed by ATCT. Vehicles shall remain within established drive lanes. It is emphasized that the Contractor's authority to operate does not extend to active aircraft movement areas. The Contractor shall operate along established access roads/haul routes with prior approval of the RPR and/or ITO.

All construction personnel (Contractor and Subcontractors) requiring access to the AOA shall obtain an AOA badge. Should individuals require a temporary pass to enter the AOA, Contractor will request Escort Required Temporary Badges (ERTB) from DOT-A. The individual possessing an ERTB must be escorted at all times while within the AOA by a badge holder who possesses an Escort privilege on his/her AOA badge. While in the closed construction area (barricaded area), the Escort must maintain full control of the ERTB personnel.

h. Parking

No parking is permitted on the airport roadway as the primary purpose of the airport roadways is for motor vehicle traffic.

No person shall park any motor vehicle, other equipment, or materials within the AOA, except in a neat and orderly manner and at such locations prescribed or as directed by the RPR and DOT-A.

No person shall park any motor vehicle or other equipment or place materials within the AOA or within 15 feet of any fire hydrant or standpipe.

Parking of construction workers' private vehicles shall also be in a public parking or private parking facility outside the AOA.

Under no circumstances shall vehicles or equipment be parked within twenty (20) feet of the airport perimeter security fence line.

No person shall park any motor vehicle or other equipment or materials within 75 feet of runway 8-26 or 3-21 centerline, even when the runway is closed.

i. Vehicle Identification including Lighting and Markings

Each vehicle or unit of equipment that travels or operates on any part of the AOA shall have an approved decal or painted company name applied to both sides of the vehicles in a location opposite the driver's seat. The identification should be applied to the front door panels. Magnetic or temporary signs are acceptable.

All vehicles and equipment, except those under escort, must be marked with the company name and/or logo on both sides. Per the Contractor's Training Guide March 16, 2022, the lettering for the company name shall be in bold characters of a minimum 4" in height, and 1-1/2" in width, and the height of the logo shall be a minimum of 6". Escort vehicles must be marked with the company logo as stated above, and must be properly equipped with a two-way radio. Escort vehicles may be used to escort a maximum of two (2) vehicles onto the AOA. The vehicle(s) providing the escort must lead the convoy and is responsible for all trailing vehicle(s). This vehicle may escort unmarked vehicles onto the AOA. Vehicles being escorted shall be in radio or cell phone contact with the lead escort vehicle. Under no circumstances may an employee provide an escort from inside an unmarked vehicle. Drivers of escorted vehicles must display a delivery escort badge or a construction escort badge.

Use of logos or symbols in lieu of letters is subject to approval by the ITO Airport Manager.

Vehicles that appear at access gates without signs on both sides of the vehicle will be denied access. Vehicles found to be missing signs within the AOA will be escorted off the jobsite and not be permitted to re-enter until signs have been installed.

Any person operating equipment in the AOA shall, in addition to this section, abide by all existing FAA and other governmental rules and regulations.

It is emphasized that the Contractor's authority to operate does not extend to active aircraft movement area. The Contractor shall operate along established access roads/haul routes with prior approval of the DOT-A and ITO Management.

j. Load Limits

When using airport roadways, the Contractor shall restrict the gross weight as required by local codes. For heavier vehicle loads, permits shall be obtained through the agency having jurisdiction. All vehicle weights are subject to verification by the RPR.

k. Delivery and Parking of Construction Equipment and Vehicles

No equipment or construction vehicles shall be parked or left unattended outside the airfield access gates or on public roadways. When equipment or vehicles are to be delivered to the work site, the Contractor must be present to accept the equipment or vehicles and shall escort them inside the airfield fence and have them parked in the contractors staging area or other approved location on the airfield. Any construction equipment or vehicles left unattended outside the airfield gates or on public roadways shall be impounded by the City.

l. Requirements and Regulations Relating to Vehicle Drivers

All drivers operating vehicles on airport property must carry a valid United States driver's license on his/her person, appropriately endorsed for the type of equipment being operated.

Drivers designated to operate vehicles within the AOA shall receive special drivers training as required in Section 5.m. and be approved by the airport before being allowed to operate within the AOA or must be escorted by an approved escort. Drivers operating outside the AOA may operate vehicles without attending the special drivers training.

Permission to apply for vehicle permits shall be made in writing to the ITO Airport Manager through the RPR and/or DOT-A, and must list all vehicles requesting a permit. Construction equipment (cold planer, AC paver, AC rollers, backhoes, etc.) that remain at the jobsite do not require a vehicle permit (vehicle permit required for licensed vehicles only), and may be stored in the staging area or closed construction areas as approved by DOT-A, ITO, and FAA. An orange and white checkered flag shall be displayed on all equipment while within the AOA during non-working hours.

Use of tall equipment (cranes, concrete pumps, etc.) will not be allowed unless the FAA Form 7460-1 determination letter is issued and approved for such equipment.

m. Vehicle Driver Training

Every driver who operates a vehicle on the AOA of the airport must be familiar with the pertinent provisions of the state of Hawai'i vehicle code and the traffic and licensing subsections of these rules and regulations. The driver must have been trained in the vehicle to be operated.

All Contractor employees and subcontractors who will be driving a company identified vehicle within the AOA will be required to obtain an Airport Motor Vehicle Operator's Permit (Ramp License). A ramp license, in conjunction with a valid, state issued driver license, current AOA badge, and permission from ITO will qualify drivers to operate vehicles within the non-movement areas of the airport only. To qualify for the ramp license, each operator must attend the ramp license class provided by ITO, and pass the written examination.

The applicant must pass a written 25 question multiple-choice test administered by the airport Pass and ID office covering AOA safety rules and regulations. A score of 80% (20 correct responses out of 25) is required to pass. If the applicant fails the test, it can be re-administered the following day. Ramp licenses are valid for a period of 8 years or until the expiration of the applicant's state issued driver license, whichever is shorter.

For employees working or driving inside the movement areas, a "Movement Area" stamp shall be placed on the AOA badge. In order to qualify for the movement area license, each operator must attend the movement area training class provided by ITO and pass the written examination which includes proper procedures for radio communications with Ground Control and the ATCT.

The applicant must attend a movement area training class and pass a written test administered by the Ramp Control Supervisor. The test covers AOA safety rules and regulations, proper procedures and phraseology for communicating with Ground Control and ATCT, knowledge of airport layout including all taxiway designations, and familiarity with airport signing and pavement markings. The training class and test are offered three (3) times per month. A score of 90% is required to pass. If the applicant fails the test, it can be re-administered at the next scheduled offering. Movement area qualification is good for a period of 1 year or until the expiration of the applicant's driver license or ramp license.

The preferred procedure for Contractors unfamiliar with the airport who require movement area access is to be escorted by ITO operations personnel until such time as they have proven competency in navigation and communication on the airfield as determined by the Ramp Control Supervisor. The Contractor shall coordinate the need for escort with ITO at least one week prior.

One approved vehicle with an operator who possesses an Escort privilege on his/her AOA badge can escort up to two (2) vehicles onto the AOA.

n. Two-Way Radio Communications

Radio communications with the ATCT will be in accordance with the procedures specified by the most current memorandum of understanding between FAA control tower (or contract tower) and ITO.

The contractor will provide at least two (2) Radio Monitoring Personnel (RMP) to coordinate access in the movement area. The RMP will acquire the necessary training as directed by ITO management. The RMP shall acquire the movement area certification at ITO, and be familiar with proper radio communication procedures and phraseology. Contractor employees with valid airport movement area certification and properly equipped and marked vehicles may escort up to two other vehicles onto the AOA. The vehicle providing the escort must lead and is responsible for the trailing vehicles. Communication with escorted vehicles is also required with use of a hand held radio or mobile phone. RMP(s) will be expected to communicate with one or more of the following:

1. Hilo ATCT Hours of Operation (6:00am to 10:00pm, local)
 - Frequency **(118.1)** Tower – Runways
 - Frequency (118.1) CTAF when ATCT is closed (10:00pm to 6:00am, local)
 - Frequency **(121.9)** Ground – Movement Area – Taxiways & Crossing of Runways
2. Honolulu Control Facility – When ITO-ATCT is closed (10:00pm to 6:00am, local).
 - Common Traffic Advisory Frequency (CTAF) **(120.3)**

The RMP(s) shall communicate with and monitor the Hilo ATCT and/or the Honolulu Control Facility Air Traffic when performing work past the demarcation line (AOA movement area). The RMP(s) shall communicate with the Hilo ATCT and/or Honolulu Control Facility Air Traffic when the subcontractors are entering, exiting, or traveling within the active movement area. The RMP(s) shall monitor the frequencies while within the movement area. In areas and/or runway sections that are closed for construction activities, FAA-HCF gives HDOT jurisdiction for control of vehicles, equipment, and personnel if the subcontractors comply with the movement of vehicles, equipment, and personnel on and off the runway and taxiways within the designated areas.

A minimum of two (2) FAA radios shall be always kept on the jobsite. One (1) will be mounted in the vehicle and one (1) will be handheld as backup. If radios become non-operational, contractors shall contact ITO-ATCT and/or HCF via cell phone and notify them of the situation. The contractors will await their direction. If contractors are unable to reach them via cell phone, they will face the tower, and flash the vehicle headlights. The contractors will await their direction via the red, white, and green light gun.

o. Airport Security

The contractor shall be responsible to provide and maintain ITO security-badged personnel in all areas of the work, obtain necessary training required to drive vehicles within the AOA and AMA areas as directed by ITO management, and obtain necessary vehicle ramp permits for all vehicles entering the AOA.

End of Section 5

6. Wildlife Management

This project will use the following protocols to mitigate any wildlife hazards created:

All project personnel working on the AOA will receive an airfield safety briefing that will include information on the dangers of wildlife and aircraft operations. Hilo Airport will coordinate with the United States Department of Agriculture (USDA) for the wildlife briefing.

Personnel shall take immediate action to eliminate wildlife hazards whenever they are detected. Hazards include but are not limited to trash (food scraps and miscellaneous waste), standing water, or tall grass and seeds which may attract unwanted wildlife to the Airport.

Poorly maintained or damaged security and wildlife fencing and gates, which may allow animals to enter the AOA and become a potential hazard should be immediately reported to the ITO-AOC.

Any unusual wildlife activity shall be noted on the airfield inspection checklist and notifications shall be made to the USDA Staff Wildlife Biologist and Airport Operations Wildlife Superintendent.

a. Trash

All trash will be collected and contained in covered bins during construction activity and disposed of properly off-site. All Contractor vehicles shall have trash receptacles for use by personnel while on the project site. Trash receptacles stored in open portions of vehicles must have tight fitting or latching covers to prevent trash from blowing out of the receptacle due to wind, jet blast, or normal vehicle operation. Receptacles may be plastic trash bags if stored in the vehicle cab or other closed space.

b. Standing Water

Contractor shall manage storm water drainage within the project site to eliminate areas of standing or ponding water. Following rainfall events, any area with standing water within or immediately adjacent to the project site shall be immediately modified to drain the standing water. The Contractor shall make drainage improvements approved by the RPR and DOT-A to prevent the future accumulation of storm water in these areas.

c. Tall Grass and Seeds

The Contractor shall be responsible for the proper maintenance of grass and other vegetated areas within the project site. Grass shall be trimmed and kept at less than 3-inches in height.

d. Poorly Maintained Fencing and Gates

The Contractor shall be responsible for the maintenance of security at all locations affected by the Contractor's activities at all times. Unless approved by the RPR, DOT-A, and ITO, the integrity of the existing airport security fence shall be maintained at all times. During working hours, the Contractor will provide security personnel at all gates used for Contractor access. Gates will remain locked at all other times.

Projects which require alteration of the existing airport security fence shall require the Contractor to submit detailed phasing plans for fence construction showing how security will be maintained. Contractor fence phasing plans must be approved by the RPR, DOT-A, and ITO prior to construction. All changes to the airport security fence shall be completed in a manner which maintains the existing level or airport security, as approved by the RPR and ITO, by the end of each workday. Whenever possible, new security fence shall be constructed and approved by the RPR and ITO prior to the removal of the existing fence.

e. Disruption of Existing Wildlife Habitat

Projects on runways, taxiways, aprons, and other paved areas of the airport are not expected to disrupt wildlife habitat. Work in non-paved areas of the airport may encounter wildlife habitat. The Contractor shall report all wildlife sightings to HILO GROUND on radio frequency 121.9 or ITO-AOC at (808) 960-9433.

The Contractor is advised that there are endangered seabirds in the vicinity of the airport. The Contractor must keep construction lighting to a minimum. Construction lighting must be shielded and pointed downward towards the pavement and not upward, to avoid disorientation of seabirds flying over the project area. Lighting must be pointed facing away from the ocean as much as possible. The Contractor must position light towers low to the ground and turn off construction lighting when not in use.

The seabird fallout season spans from September 15th to December 15th. Particular attention and care shall be taken with regard to placement of construction lighting during this season, and additional inspections and changes to lighting placement may be required.

All construction lighting placement is subject to approval by the Airport and the RPR.

End of Section 6

7. Foreign Object Debris (FOD) Management

Upon completion of each day's work, the contractor shall clean and remove from the project area all FOD materials generated by the Contractor's activities. The Contractor shall perform FOD checks on all areas used for Contractor access and haul routes within the AOA. Prior to reopening any closed portions of the airfield to aircraft, the Contractor shall request a FOD inspection from ITO AOC. Refer to exhibit 1 for FOD inspection procedures. Once the FOD inspection has been completed and the areas cleared for opening, the AOC will contact HCF to coordinate reopening the closed portions of the airfield.

All aircraft movement areas will be under constant surveillance by all parties to ensure they are acceptable for aircraft operations.

All utilities within and passing through the work/area phase shall be kept operational at all times, unless otherwise specified.

No loose material or waste (FOD), capable of causing damage to aircraft or capable of being ingested into jet engines, may be left in the working area, on or next to runways, taxiways, ramps, or aprons. The Contractor shall direct special attention to all areas that are operational to aircraft during construction. These shall be kept clean and clear of all materials or debris at all times.

Common sources of FOD during construction include trucking or hauling operations of construction materials to and from the construction site, demolition and removal of items (i.e. cold-milling or trenching), and during placement and construction of improvements (i.e. placement of aggregate subbase).

All loose material or waste (FOD) located on active aircraft movement areas shall be reported to the inspectors immediately; the inspectors shall coordinate with the AOC to close the area to aircraft traffic if required until cleanup is accomplished.

Trucks and equipment shall have all accumulated dirt, mud, rocks, and debris removed before accessing the AOA, and when leaving the work area. Loads shall be struck flush and secured to prohibit loss of material. If spillage occurs, such roadways shall be swept clean immediately after such spillage to allow for safe operation of vehicles as determined by the RPR. If the Contractor is negligent in cleanup and airport resources are required to perform the work, the expense of said cleanup shall be paid by the Contractor.

The Contractor shall continuously sweep and/or wash down all access routes to the construction areas and existing adjacent paved areas and AOA pavements. These areas shall be kept free of debris at all times, at no additional cost to the owner.

The Contractor shall keep a minimum of two vacuum sweeper trucks and two water trucks on site and operational at all times during working and nonworking hours and shall maintain the

sites free from dust and objectionable debris. During the period of time that there is no construction activity (between work shifts), the vacuum sweeper trucks, and water trucks must be ready and on-site with Contractor's personnel available by phone to respond immediately to a dust or debris problem as identified by ITO staff or the RPR. At no time shall there be more than a 10-minute response time to calls concerning dust/debris problems during work hours and a 60-minute response time at all other times on a 24-hour-per-day basis. The Contractor shall provide whatever means necessary to prevent FOD in aircraft movement areas and provide construction area generated dust control on a 24-hour basis.

The Contractor shall provide truck washes, rumble strips, shakers, or other means as necessary to prevent FOD in AOA and will be monitored by the RPR. If the Contractor's method does not remove debris adequately to meet safety requirements, the Contractor may be shut down and will be required to utilize other methods at no additional cost to the airport or DOT-A.

End of Section 7

8. Hazardous Materials (HAZMAT) Management

The Contractor shall have an emergency spill cleanup kit on the project site at all times. The spill kit will include absorbent pads and one 5-gallon bucket with cover. In the unlikely event of fuel or hydraulic oil spills; the Contractor shall contain the spill and place the absorbent pads on the spill immediately, used pads shall be placed in the bucket and disposed of properly off-site at a later time.

All construction activity involved with the handling of hazardous materials must provide the RPR with a hazardous materials removal plan. The plan will include the name of the company used for removal of hazardous materials and the names and 24-hour telephone numbers of staff authorized to handle such removals.

No fuel, oil, grease, flammable liquids, or contaminants of any kind, including detergents, shall be allowed to flow into or be placed in any sewer system or open water areas without a separator or unless connected to an industrial waste system.

Transport and handling of hazardous materials requires special procedures as outlined in the project specifications.

End of Section 8

9. Notification of Construction Activities

ITO Airport Operations, Maintenance and Administration will make notifications to airport users using continuously updated web based distribution methodologies. The Contractor will notify the ITO AOC at the start of each work night to request confirmation of issuance of the NOTAM for taxiway or runway closure or restriction. Refer to exhibit 1 for procedures for issuing NOTAMs.

During weekly Project Coordination meetings, construction activities for the next three (3) weeks shall be discussed. Specific items should include, but are not limited to, phase beginning or ending, construction activities requiring closure of taxiways, modification to the vehicle service roads, and construction activities requiring FAA Form 7460-1 submittal.

Runway closures will require shut down of runway NAVAIDs, including instrument landing system (ILS), Precision Approach Path Indicators (PAPIs), Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR), Runway End Identifier Lights System (REIL) and Localizer (LOC). Begin coordination with FAA HCF/SSC at least 30 days prior to any planned runway closure for NAVAID shutdowns.

Refer to Points of Contacts section at the beginning of this CSPP for a list of involved parties and their contact information.

a. NOTAM Issuance

No ramp, apron, taxiway, or runway area shall be closed to aircraft without approval of ITO and the RPR. This will enable NOTAMs, or other advisory communications, to be issued. A minimum of 72-hours' notice, or as otherwise stated herein, of requested closing shall be directed to ITO at the weekly Project Coordination meetings. All NOTAMs must be published 48-hours prior to closures.

- RPR or HDOT PM shall coordinate the scheduling of the NOTAM and notify HCF.
- Should the NOTAM need to be cancelled, the Contractor shall notify the RPR.

The Contractor shall contact ITO AOC to confirm the issuance and correctness of NOTAMs prior to beginning work each day. AOC will publish the NOTAMs and notify HCF. Should the NOTAM need to be cancelled, the Contractor shall notify the AOC. Refer to exhibit 1 for procedures for issuing NOTAMs.

b. ARFF Coordination

ARFF personnel, although involved in the planning and design phases, will receive a briefing prior to the start of construction along with periodic briefings on the status of the project. The Contractor shall provide uninterrupted ARFF access to all areas of the airport. Contractor shall not block, demolish, or inhibit access to both ARFF access points to Taxiway A at any time.

Additionally, ARFF personnel will be invited to weekly construction meetings when work is expected to directly affect ARFF operations. The Contractor shall advise ARFF personnel of the following occurrences:

- AOA fence relocations
- Waterline and fire hydrant deactivation and activation
- Re-routing, blocking and restoration of emergency access routes
- The use of hazardous materials on the airfield

c. DOT-A Coordination

Contractor shall work with DOT-A to maintain a list of the responsible representatives/points of contact for all parties and procedures for contacting them 24 hours a day, seven days a week. This list includes local FAA HCF, FAA Technical Operations personnel, and the Contractor including all subcontractors.

In the event of an aircraft emergency that may affect construction activities determined by ITO; the Contractor's personnel and/or equipment may be required to immediately vacate the area. ITO will notify the DOT-A and RPR, who will then coordinate with the Contractor. In cases of imminent danger; ITO will coordinate directly with the Contractor.

d. FAA Coordination

1. Marking of Equipment and Restrictions on Cranes

If cranes or other equipment exceeding the heights given in the plans (GC001), Contractor will be required to submit for approval the FAA's application Form 7460-1. The submittal will be made to DOT-A for review and acceptance. DOT-A will forward submittals to FAA for approval. Before submitting the 7460-1, confirm with DOT-A if any previous cases have been submitted for the project that should be referenced.

The Contractor and DOT-A have no control over the FAA's review and approval time. Contractor is encouraged to submit any required applications well in advance (at least three (3) months) of the need for the use of the equipment or crane.

Contractor to Submit:

- Latitude
- Longitude
- Existing ground elevation including vertical datum
- Height of crane, structure, stockpile, etc.
- Exhibit indicating operating area of the equipment or crane

e. Emergency Notification Procedures

In case of an emergency caused by an accident, fire, personal injury, or illness, airport Crash/Fire are to be immediately notified:

Hilo ARFF (Crash Fire) - (808) 961-9317 (o)

ARFF will coordinate with other emergency agencies as necessary. Contractor shall also notify the RPR and AOC so that any coordination or closures that may be required can be addressed immediately.

It is possible that unexpected field emergencies may arise during the progress of the work. Such emergencies may be caused by malfunction of equipment, accidents, or even damage or possible damage to nearby existing structures, property, or taxiway fixtures. Other unexpected airport emergencies may also arise during the progress of the Work.

- In the event of a field or airport emergency, ITO Security will be notified immediately by the Contractor on-site field coordinator, informing him/her of the situation. Airport Security will contact Airport Management who will decide on the appropriate remedial actions that are needed to stabilize the situation such that the runway and/or taxiway can be re-opened by the end of the work period. The Contractor will then notify the RPR and the HDOT PM responsible for the project.
- In case of an airport medical or mechanical emergency the Contractor shall clear the taxiway immediately.
- AIRCRAFT EMERGENCY: In the event of an aircraft mechanical or medical emergency or severe weather conditions that may affect aircraft operations as determined by ITO Airport Management, Operations, or Maintenance, the Contractor's personnel and/or equipment may be required to immediately vacate the area. Shutdown procedures as described in section 2.d shall be performed when reopening the taxiways, unless insufficient time is available in the event of an aircraft emergency requiring immediate runway/taxiway restoration.

End of Section 9

10. Inspection Requirements

DOT-A, ITO, and Contractor personnel will conduct continual inspections of the construction site to ensure that areas surrounding the sites are safe for aircraft operations.

ITO personnel will note any discrepancies on the daily inspection checklist.

Any aircraft movement surface or adjoining runway, taxiway, or taxilane safety area that does not pass inspection must remain closed until such time cleanup is performed and approved.

ITO shall conduct final inspections prior to opening the area for aircraft operations. ITO AOC or Maintenance will notify HCF when areas may be opened for aircraft operations. ATCT shall also be notified if reopening happens during ATCT hours of operation (6:00am to 10:00 pm)

Frequent inspections will be made by ITO and the DOT-A RPR or RPR's authorized representative during the critical phases of the work to ensure that the Contractor is following the recommended safety procedures. The inspector shall report any violations or potential safety hazards to the RPR who will in turn advise the Contractor of the concern for immediate correction by the Contractor.

a. Daily (or More Frequent) Inspections

At the end of each work shift or work phase, the area will be cleaned to remove all FOD created by the construction activity from all runways, taxiways, and apron areas. The Contractor shall ensure that no loose material remains on the construction equipment and vehicles that may become dislodged during travel prior to leaving the work site. The Contractor will inspect and clean the haul route outside of the barricaded area and ensure there is no FOD on the active airport areas. Contractor shall ensure that no open trenches/excavations deeper than 3-inches or material placed higher than 3-inches from the surrounding ground surface exist in any taxiway safety areas. All Runway Safety Areas shall be backfilled flush with grade. Prior to opening of a closed area, the Contractor shall perform a FOD check of the work area and the haul route used for the shift or phase and will not remove any low profile barricades and/or lighted X's until the area has been cleared by ITO.

b. Final Inspections

The Contractor will request a FOD inspection from the RPR and Hilo AOC or Maintenance when the FOD check and cleaning is completed. Once the FOD inspection has been completed and cleared for opening, AOC or Maintenance will contact the HCF and cancel the issued NOTAMs. The Contractor's request for inspection shall be at least 30 minutes prior to reopening the area to allow adequate time for inspection and final approval.

End of Section 10

11. Underground Utilities

All utilities within the project site shall be protected in place unless identified in the plans for removal or relocation. Significant utilities of concern include the following, but are not limited to:

- Airfield lighting, signage, and associated cabling
- Stormwater drainage pipes and inlets
- FAA communication lines

a. Procedures for Locating and Protecting Existing Underground Utilities/Facilities in Excavation Area

In accordance with State law, the Contractor shall contact the Hawaii One Call Center (866-423-7287) regarding any public utilities and the FAA HCF or FAA Technical Operations for drawings or other information regarding any airport utilities prior to excavation. All existing utilities within the construction areas or the staging area that are designated to remain in place shall be maintained, accessible, and protected at all times (i.e., waterlines, fire hydrants, valves, drainage structures, electrical and FAA cables/equipment, etc.). Refer to the specifications, phasing plans, and demolition plans for additional requirements that are associated with this project.

The existence, location, and characteristics of underground utility information shown on these plans were obtained from available record data. No representation is made as to the accuracy or completeness of utility lines shown or any unknown utilities. Contractor shall make reasonable inferences as to existing underground utilities from observation of visible conditions and take appropriate measures to protect all utilities, including underground communication installations, which are owned and operated by ITO, FAA, HELCO, or other third parties.

Contractor shall perform field utility locates, as well as site investigation to verify location and depth of all utilities. Investigate by means of vacuum or air pressure pot-holing or other means as approved by ITO and DOT-A. Contractor shall accurately record and stake the location of all utilities.

Exercise extreme care when using any equipment to prevent contact with any nearby power lines and power sources. Safe working clearances shall conform to the national electrical code.

All structures shall be designed to support aircraft loads specified unless otherwise noted. The Contractor may make certain temporary connections to the existing airfield lighting system only if it is associated with keeping the required lighting systems operational and approved by the RPR. The Contractor shall provide a separate power source for other construction related power needs.

When power and control cables for airfield lighting and navigational aids are located in the construction areas, the Contractor's personnel shall be familiar with these cable locations and

keep vehicles and equipment clear of any cables at all times. Mark/delineate the surface for each utility in a manner acceptable to the RPR. As indicated on the plans and the specifications, the Contractor shall locate all utilities (operational and abandoned) prior to starting any excavation, demolition, or earthwork. The RPR shall contact FAA technical support unit to facilitate locating FAA facilities and cables.

Caution: high-voltage lines are within the project limits. All work shall be performed in conformance with all federal, state, and local utility and contract requirements. Sequencing of work and safety practices used in, on or around high-voltage lines or other utility structures are the responsibility of the Contractor, except where electrical distribution and transmission lines have been de-energized and visibly grounded at the point of work. Assume that all such lines are energized, and the Contractor shall conform his operations to (among other requirements) CFR Title 29 Part 1926, "Safety and Health Regulations for Construction," Section 1926.550 (a) (19).

The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions by the Contractor to protect the health, safety, and welfare of workers and of the public. Facilities requiring special precautions include: underground electric supply system conductors or cables, with the potential to ground more than 300 V, either directly buried or in duct or conduit that do not have concentric grounding; or other effectively grounded metal shields or sheaths.

All utilities encountered along the line of the work shall be maintained in service during all operations under the contract, unless other arrangements satisfactory to the utility owner, the affected agency, and the RPR are made in advance. Utilities shall include, all above or below ground conduit, pipes, wet wells, ducts, cables, and appurtenances associated with oil, gas, water, steam, irrigation, storm drain, wastewater, air, electrical, power, instrumentation, communication, telephone, TV, and lighting systems, whether or not owned by ITO. All valves, switches, vaults, and meters shall be maintained readily accessible for emergency shutoff.

Any utility that is damaged by the Contractor shall be immediately reported to the RPR and ITO and immediately repaired to a condition equal to, or better than, the condition they were in prior to such damage at Contractor's own expense. Repair work shall be continuous until the utility or improvement is placed back in service. Any unintended outage of any existing airport or FAA utility, including and especially air navigation systems, will be subject to liquidated damages at the amount stated for contract days duration, until restored to an operable condition.

b. Underground Service Alert

The Contractor shall mark all FAA utility lines prior to any work in a given area, using a method approved by ITO. Additionally, the Contractor shall expose and verify (by field survey) the depth and alignment of all underground utilities in the construction site. The Contractor shall pot-hole

or expose and field survey all utilities within a five (5)-foot distance of any footing work, crossing utilities, etc. prior to excavation.

End of Section 11

12. Penalties

The Airports Division will impose penalties on the Contractors for noncompliance with airport rules and regulations and the safety plans. Such penalties may include rescission of driving privileges or access to the AOA or banning an individual from the project site. Safety and security precautions are necessary at the Hilo Airport. Failure of the Contractors to adhere to prescribed requirements may have consequences that jeopardize the health, safety or lives of customers and employees at the airport. Security violations of DOT-A, FAA or TSA rules or regulations; or safety violations of the CSPP or FAA requirements, may result in fines up to \$ 10,000 per occurrence or individual, revocation of AOA badge, or loss of AOA driving privileges, depending on the severity of the offense. The Airport employs a contractual law enforcement firm to support the overall Security Program.

1. Contract Law Enforcement: Security personnel are under contract to the State Airports Division and are deputized under State law to engage in law enforcement activities prescribed under Federal Regulations Part 107.17. The current contract is performed by Allied Security, which provides personnel to monitor security screening station law enforcement positions, access gates, traffic control, perimeter and ramp patrols and the Pass and ID office.
2. TSA: Federal Security personnel who perform pre-departure passenger screening.

Misuse of Airport security access privileges by any badge holder or any violation of Airport, State and/or Federal rules and regulations will subject violators to arrest or fine as prescribed by law and revocation of all further clearance and access into security areas.

Hilo International Airport has the option to issue warnings on the first offense based upon the circumstances of the incident. Individuals involved in noncompliance violations may be required to surrender their Airport ID badges pending investigation of the matter.

Penalties for violations related to (DOT-A, FAA, and TSA) procedures include the following:

1. Warning citation, Airport ID badge confiscation, retraining, and a letter from the employer stating what action if any has been taken to prevent this from happening again.
2. Project shutdown and/or removal of personnel involved from the AOA.
3. Class B Misdemeanor citation-(Hilo International Airport Rules & Regulations) Ordinance Title 19 Administrative Rules.

Project shutdown or misdemeanor citation may be issued on a first offense.

Reopening of Runway 8-26, and Runway 3-21, as well as accelerated construction areas, at the scheduled times is of critical importance to air carrier operations at ITO. If the runway(s) and critical construction area(s) cannot be reopened at the prescribed time due to the Contractor's failure to return the RSA/TSA to an acceptable condition, clean up, and clear the site, liquidated damages will apply as stated in the project plans and specifications.

End of Section 12

13. Special Conditions

It is possible that unexpected emergencies may arise during the progress of the construction work. Construction emergencies may be caused by equipment breakdowns, accidents or even damages to nearby existing structures, property, or light fixtures. Airport emergencies may arise during the progress of the work, such as in-flight emergencies that may develop. In the event of a construction or airport emergency, ITO-MS, ARFF and the Hilo Airport Security Dispatch will be notified immediately, informing them of the situation. ITO-MS or ARFF will decide on the appropriate remedial actions that are needed to stabilize the situation. Pages 7, 8 and 9 of this CSPP provide the points of contact flow charts (draft) during non-emergency and emergency situations. **Contractor shall confirm all information on the flow charts to be current, add in their own contact information, and submit updated flow charts as attachments to the SPCD.**

Other special conditions that may affect the construction work are listed below:

Weather Conditions

In the event of adverse weather conditions, the Contractor may be required to reschedule the work and/or closures and notify ITO to cancel any applicable active NOTAMs. The Contractor will obtain the current and forecasted weather conditions, and confirm with DOT-A, ITO, FAA ADO and FAA HCF whether to proceed with the scheduled work. Once the “Go” / “No Go” call is made, work will continue until the runway and/or taxiway has been restored to an operable condition. The “Go” / “No Go” call for work will be made two (2) hours prior to the scheduled closure time. Refer to exhibit 1 for procedures for issuing NOTAMs.

Contractor shall assume that work will be canceled by ITO or FAA with 1-hour notice due to weather or other airport operational limitations, up to 5 full work shifts over the duration of the project, at no additional cost to the owner.

Air Ambulance

During life safety incidents, the Contractor may be required to temporarily stop and vacate the AOA to allow operations of air ambulance or other life-threatening medical emergency.

End of Section 13

14. Runway and Taxiway Visual Aids

a. Marking Removal

All existing pavement markings requiring removal shall be obliterated in a manner that will not leave marking shadows at the direction of the ITO and the RPR. All permanent pavement markings shall be restored at project completion, unless otherwise noted during phase 3 and 7.

Proposed runway and taxiway closures necessary to complete the work during phases 1-6 will be short term closures occurring at night with the runway and/or taxiways re-opening the next day. Phase 7 will have 24/7 closures requiring marking removal as well as nighttime closures. See GC271 for additional information.

b. AOA Closures (Runways, Taxiways, Ramps)

All airport lights and equipment designated to remain within the work areas, safety areas, and on the AOA shall be protected at all times. The Contractor shall protect these lights and equipment from damage while working at the work site. When a taxiway or taxilane is closed, the lights shall be turned off or covered. Damage due to the Contractor's operations shall be repaired immediately at the Contractors' expense.

For temporary closures of taxiways or taxilanes, the Contractor shall turn off/cover edge lights, and signage around the work areas during the work shift, as directed by ITO and the phasing plans. The Contractor shall protect these lights from damage at all times while working at the work sites. All edge lights designated to remain shall be operational at the end of the closure. Submit proposed method for RPR's approval.

Temporary runway threshold relocation is required during this project. Threshold relocations require advance (30-day minimum) notice of effective date to ITO and ATC. In order to perform work required to move the threshold, including runway lights and signs full runway closures are required. Refer to the construction phasing plans for details.

For all runway closures, including nightly closure, the runway lighting, markings, and grading and object clearance requirements, as specified in applicable FAA Advisory Circulars, shall be met and approved by ITO, prior to reopening of the runway. For nightly closures, this requires that any excavations within the runway safety area be backfilled, graded, and compacted to runway safety area standards, each morning, prior to opening the runway.

c. Temporary Lighting

When existing edge lighting is rendered inoperable on an active runway or taxiway, the Contractor must install temporary edge lights as directed by the ITO, DOT-A, and/or the RPR.

Every effort possible shall be made to construct temporary taxiway lighting to conform to the runway or taxiway safety area frangibility and height restrictions as specified in the FAA Advisory Circular 150/5370-2, Operational Safety on Airports During Construction, (latest edition).

Temporary edge lights shall be securely fastened down and the electrical power cable shall not be driven across. Airfield lighting cables operate at high voltage; they have the potential of 5,000 volts and should be handled by qualified personnel only.

Temporary light plants used in conjunction with nighttime work will not be located in such a manner as to be an obstruction or hazard. In addition, these light plants will not be located where the glare of the light will cause visual or physical interference to operating aircraft and the FAA-ATCT. Light plants shall not be parked on any runway pavement at any time, including work hours.

d. Permanent Signage

Contractor shall protect all existing airfield signs. All permanent signs with guidance leading into a closed area shall be completely covered as shown on the plans, and as directed by ITO and the RPR.

End of Section 14

15. Markings and Signs for Access Routes

All haul routes shall conform to marking and signage in the ITO Approved Airport Certification Manual.

Marking and signs for access routes will not be used on this project. As construction vehicles and/or equipment arrive to the project site, they will enter the AOA through the designated AOA access gates. Construction vehicles and equipment will wait in an area not affecting Hilo Airport Operations (or in the staging area) until all necessary notifications have been made and the lighted “X” and low-profile barricades have been placed. At the end of the work shift, all construction vehicles and equipment shall be escorted back to the staging area or to the access gate if exiting the AOA. Please refer to *Drawings GC211 – GC272* regarding the proposed hauling routes.

End of Section 15

16. Hazard Marking, Lighting and Signing

When areas on the airport are closed or present hazards due to Contractor activities, they shall be marked and lighted according to AC 150/5340-1 (current edition) "Standards of Airport Markings" and AC 150/5370-2 (current edition) "Safety During Construction". Marking and lighting must be approved by the RPR.

Every work zone, excavation or hazard on or adjacent to the airfield or other areas shall be marked. Please refer to *CSPP Plans (GC211-GC272)* for location and type.

During taxiway closures, the Contractor shall utilize lighted airport low profile barricades. The Contractor shall place lighted runway crosses at each end of the runway during periods of runway closures, and one end of the runway during periods of shortened runways.

The Contractor shall completely fence or barricade any excavations, to the satisfaction of ITO Airport Operations and the RPR, to provide protection against anyone falling into the excavation. The fencing and/or barricades shall be in place at all times except when workers are present and actual construction operations are in progress.

Continuous burning standing red barricade lights and/or other red lighted hazard devices stipulated on the phasing plans shall be operative at all times while in place. It shall be the Contractor's responsibility to immediately repair or replace any light or flasher that is not operating.

Barricades shall be in place prior to commencing construction operations and shall be maintained for the life of the contract.

Every excavation or hazard on or adjacent to runways, taxiways, ramps, or other areas on the airfield, shall be marked in accordance with the following conditions; lights shall be solar-powered, the Contractor shall obtain the approval of ITO Airport Operations and the RPR on the condition of the work site, including lights, before leaving the work site in the evening.

Beacons and flags required on all contractor vehicles/equipment must be maintained in good working condition, and flags shall be replaced if they become faded, discolored, or ragged.

Limits of the various phases of work shall be clearly delineated with barricades, warning signs with attached steady or flashing red lights; "standing red" barricade lights and other markings as shown on the plans specified herein, in order to deter aircraft and vehicles from entering the construction areas.

Contractor shall continually inspect and maintain all construction barriers, fencing, and gates in good condition, see construction phasing sheets.

Portable lighting provided for any night work shall not interfere with air navigation. Lights shall be transported to the work areas pointed down and turned off to avoid affecting FAA ATCT Operations.

a. Equipment

Hazard marking and lighting equipment for the project shall consist of orange and white, low profile barricades with red lights as shown on Drawing GC002. The barricades will be placed at locations as shown on the CSPP Plans (GC211-GC272). Portable highway barricades, wooden lathes, rubber delineators, or any barricades other than approved low profile barricades are not acceptable for use. Setback line locations are determined by Runway and Taxiway Safety or Object Free Areas, and are located at 250 feet from the Runway 8-26 centerline, 200 feet from Runway 3-21 centerline, or 160 feet from taxiway centerlines as shown (and unless otherwise noted) on CSPP Plans.

For phases with work areas located in areas of risk due to aircraft jet blast, the Contractor is advised that precautions should be taken to minimize jet blast hazards. See Jet Blast Analysis Plans (attached) for anticipated jet blast contours.

1 Runway Lighted "X":

Whenever work is required in the RSA, lighted "X"'s shall be placed at each end of the runway directly on or as near as practicable to the runway designation numbers. Lighted "X"'s shall face the approach direction for the respective runway end. The lighted "X"'s shall be removed at the end of each work shift and/or work phase, or when the runway is to reopen.

2 Low Profile Barricades:

Low profile barricades shall be used to identify the closed areas due to construction activities. These low profile barricades shall be orange or white, and shall have at least one (1) red 360 degree light mounted to each barricade. Low profile barricades shall be placed approximately 15'-0" O.C. (maximum 20'-0" O.C.) while construction is ongoing and during non-working hours, or as otherwise noted on the plans. The orange and white barricades shall be placed in alternating colors (orange base and white base), and shall be located and secured to prevent displacement from jet blast or other surface wind conditions. Low profile barricades shall be either Neubert Aero Corporation Model NAC-PC 2410, Multi-Barrier Safety Barricade Model No. AR-10x96 or FAA approved equivalent. Proposed locations of the low profile barricades are shown on the phasing plans. The barricades will be filled with water to weigh them down, and prevent FOD or movement from jet blast and/or high wind conditions.

3 Reflective Cones and Type II Barricades:

If required, reflective cones and or Type II barricades shall be used to demarcate AOA travel route(s), and locations where vehicles shall yield to aircraft and shall be adequately anchored from jet blast.

4 Construction Lighting

For night working hours, temporary light plants shall be used to provide enough lighting to perform the scheduled work. The light plants shall be located away from any obstruction or hazard, and positioned and point away in such a manner that it does not cause visual or physical interference to operating aircraft and the FAA-ATCT. The light plants shall be taken down at the end of the work shift, and stored at the equipment staging area. All Contractor personnel and subcontractors working on the AOA during hours of darkness shall wear high visibility vests with reflective markings and orange/visible hard hats. Light plants may not be placed within 75 feet of runway centerline at any time.

End of Section 16

17. Protection of Runway and Taxiway Safety Areas

Runway Safety Area (RSA), Taxiway Safety Area (TSA), Object Free Zones (OFZ), and Object Free Areas (OFA) will be impacted by the work, including the closure of runways and taxiways adjacent to the work area.

Contractor will be required to coordinate the construction work to accommodate clearance requirements for arrival and departure of scheduled aircraft, and maintain compliance with AC 150/5370-2, Operational Safety on Airports During Construction, (current edition). The AC sets forth guidelines for maintaining desired levels of operational safety during construction.

Contractor will require that project staff attend mandatory training sessions to reinforce the importance of airport protocol. The intent of the presentations will be to highlight common threats such as safety area encroachments, improper ground vehicle operations, and unmarked or uncovered holes and trenches in the vicinity of aircraft operating surfaces. Airport staff will be invited to make presentations on topics of their choosing.

a. Runway Safety Area (RSA)

The RSA is the defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. No construction may occur within the RSA while the runway is open for aircraft operations.

b. Runway Object Free Area (ROFA)

Construction, including excavations, may be permitted in the ROFA. Equipment must be removed from the ROFA when not in use, and material shall not be stockpiled in the ROFA if not necessary.

c. Taxiway Safety Area (TSA)

The TSA is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway. No construction may occur within the TSA while the taxiway is open for aircraft operations. All work within the TSA shall be coordinated with DOT-A, FAA, and ITO.

d. Taxiway Object Free Area (TOFA)

The TOFA is regularly penetrated by aircraft wings during normal operations, thus the restrictions are more stringent than the ROFA restrictions. No construction may occur within the TOFA while the taxiway is open for aircraft operations.

e. Obstacle Free Zone (OFZ)

In general, personnel, material, and/or equipment may not penetrate the OFZ while the runway is open for aircraft operations. If penetrations to the OFZ are necessary, it may be possible to continue aircraft operations through operational restrictions. All work within the OFZ shall be coordinated with DOT-A, FAA, and ITO.

f. Runway Approach/Departure Surfaces

All personnel, materials, and/or equipment must remain clear of the applicable threshold siting surfaces, FAR Part 77 Approach Surfaces, Terminal Instrument Procedures (TERPs) surfaces, or One Engine Inoperative (OEI) surfaces. Objects that do not penetrate these surfaces may still be obstructions to air navigation and may affect standard instrument approach procedures. Should construction work occur within the runway approach and/or departure surfaces, a runway closure may be required. During phase 6, aircraft may depart from runway 26 over the work area. All work within or adjacent to the runway approach and/or departure surfaces shall be coordinated with DOT-A, FAA, and ITO.

g. Procedures and Equipment to Delineate Closed Construction Areas from Airport Operational Areas

No ramp, apron, taxiway, or runway area shall be closed to aircraft without approval of ITO and the RPR. Closed areas shall be delineated per the requirements of the plans, and sections 14, 15, and 16 of this CSPP.

End of Section 17

18. Other Limitations on Construction

a. 18.1 Additional Restrictions

1. Runway and Taxiway closure areas will be limited to the areas shown for each phase in the phasing plans (GC211 – GC272), to allow proper aircraft movement.
2. The allowable working hours for each construction phase are listed on the phasing plans. If necessary, the working hours may be adjusted by DOT-A, ITO, and/or the FAA.
3. Jet blast considerations – a Jet blast evaluation was included as part of the planning process. The review included aircraft distance from construction and aircraft movement around the construction area. Equipment, small tools, construction material, stockpile material, and excavations/trenches shall be constrained in a manner to prevent movement resulting from aircraft jet blast or high wind conditions. Equipment and materials will not be stored near areas susceptible to jet blast. See Jet Blast Analysis Plans in Appendix C for aircraft movements causing jet blast impacts to adjacent to work areas.
4. Contractor shall maintain a safe operating area, free of FOD, at all times. Vacuum sweepers, as outlined in these specifications and on the plans, shall be continuously utilized to maintain the work site and haul routes. Non-badged vehicle operators shall be escorted at all times while within the AOA between access gate and work site. Access gate guards shall be required to register all Contractor personnel accessing the AOA subject to the requirements of airport security, TSA and ITO Security Provider which may include vehicle searches for weapons, explosive devices or other prohibited items not allowed within the AOA. Only Contractor and DOT-A authorized personnel shall be allowed through contractor gates.
5. The existing condition of the project may be altered due to construction currently being performed at the Airport. It is the Contractor's responsibility to confirm and work with the existing condition of the project area at the time of construction.
6. Other contracts adjacent to the project may be ongoing at the time of construction. The Contractor shall coordinate his/her efforts with adjacent contracts to the satisfaction of DOT-A and at no additional cost to the owner.
7. The Contractor shall be solely responsible for the safety and security of the site, including during nonworking hours.
8. All site preparation as indicated shall be made under the continuous inspection of the RPR. Secure the required permit for the construction of trenches or excavations that are five (5) feet or deeper or work that may jeopardize the workers.

9. The Contractor shall at all times maintain positive drainage away from existing buildings. The Contractor shall be responsible for installation, maintenance, and removal of temporary haul routes to support his/her operations within the work area. The Contractor shall maintain work area free of FOD at all times and dust control measures shall be implemented to the satisfaction of the RPR.
10. No lantern, flare pots, or open-flame welding or other devices shall be used. Blasting is not allowed.
11. Open flame welding or torch cutting operations are prohibited within the AOA unless adequate precautions have been taken and the written procedure approved by DOT-A, ITO, FAA, and/or ARFF. In addition, the Contractor will obtain an airport "Burn Permit" from ARFF.
12. No smoking by employees while within the AOA.
13. Use of tall equipment (cranes, concrete pumps, etc.) will not be allowed unless the FAA Form 7460-1 determination letter is issued and approved for such equipment.

b. ITO Airport Operations

Construction may be stopped by ITO or the RPR, any time he/she considers that the intent of the regulations regarding safety or security requirements is being violated or that a hazardous condition exists. This decision to suspend the operation will be final and will only be rescinded by ITO when satisfied that the Contractor has taken action to correct the condition and prevent recurrence.

Construction may also be stopped or suspended by ITO, in consultation with the RPR during periods of inclement weather, such as low visibility, or when it is necessary to provide an extra margin of safety to aircraft operations, or reduce other activities to keep the airport operational.

End of Section 18

Exhibit 1: Procedures for Issuing NOTAMs and FOD Inspection at ITO

Project: Taxiway and Runway Lighting Replacement at Hilo International Airport

Schedule: **See Appendix B**

Procedure for Issuing NOTAMs:

- Contractor shall submit the work schedule with the phasing plan to the AM, DOT-A, ITO-DE, and FAA prior to the pre-construction meeting.
- The schedule and phasing plan will be discussed between AM, ITO, ITO-DE, FAA-ADO, Hilo ATCT, FAA-ATO and FAA-HCF, etc. at the pre-construction meeting. Any safety or operational concerns will be discussed at that time. The work schedule and phasing plan will be approved at the meeting and shall be reflected in the meeting minutes or alternately approved by FAA-ADO via email. If any change to the schedule and/or phasing plan is required, Contractor will update and resubmit for approval.
- Upon approval of work schedule, the AM/DOT-A shall request ITO-AOC or Maintenance Supervisor to issue the NOTAM(s) for the scheduled work (72-hour notice).
- The ITO escort will confirm NOTAM(s) daily to ensure that the issued NOTAM(s) corresponds to the work schedule.
- Two (2) hours prior to the scheduled work, the contractor will check on weather conditions with ITO-ATCT. The contractor will then make a “Go” / “No Go” call for work.
 - If a “Go” call is made, the crew will commence the work.
 - If a “No Go” call is made (rainout, etc.), the contractor will contact the ITO General Construction and Maintenance Supervisor or AOC to request to cancel the NOTAM(s) and reschedule the NOTAM(s) for the following day or for the earliest possible workday.

Procedures for FOD Inspection:

- Throughout the work shift, the contractor shall clean and remove all FOD created from the construction activities. Towards the end of the shift, the Contractors will perform a FOD check, and if okay, the Contractors will notify the ITO General Construction and Maintenance Supervisor or ITO-AOC for a FOD inspection.
- If acceptable (free from FOD), ITO General Construction and Maintenance Supervisor or ITO-AOC will cancel the NOTAM(s) or let the NOTAM(s) expire. If not okay, ITO General Construction and Maintenance Supervisor will direct the Contractors to clean the FOD, etc. until the area is acceptable.

Exhibit 1 (Continued)

Flow Chart for Issuing NOTAM Requests

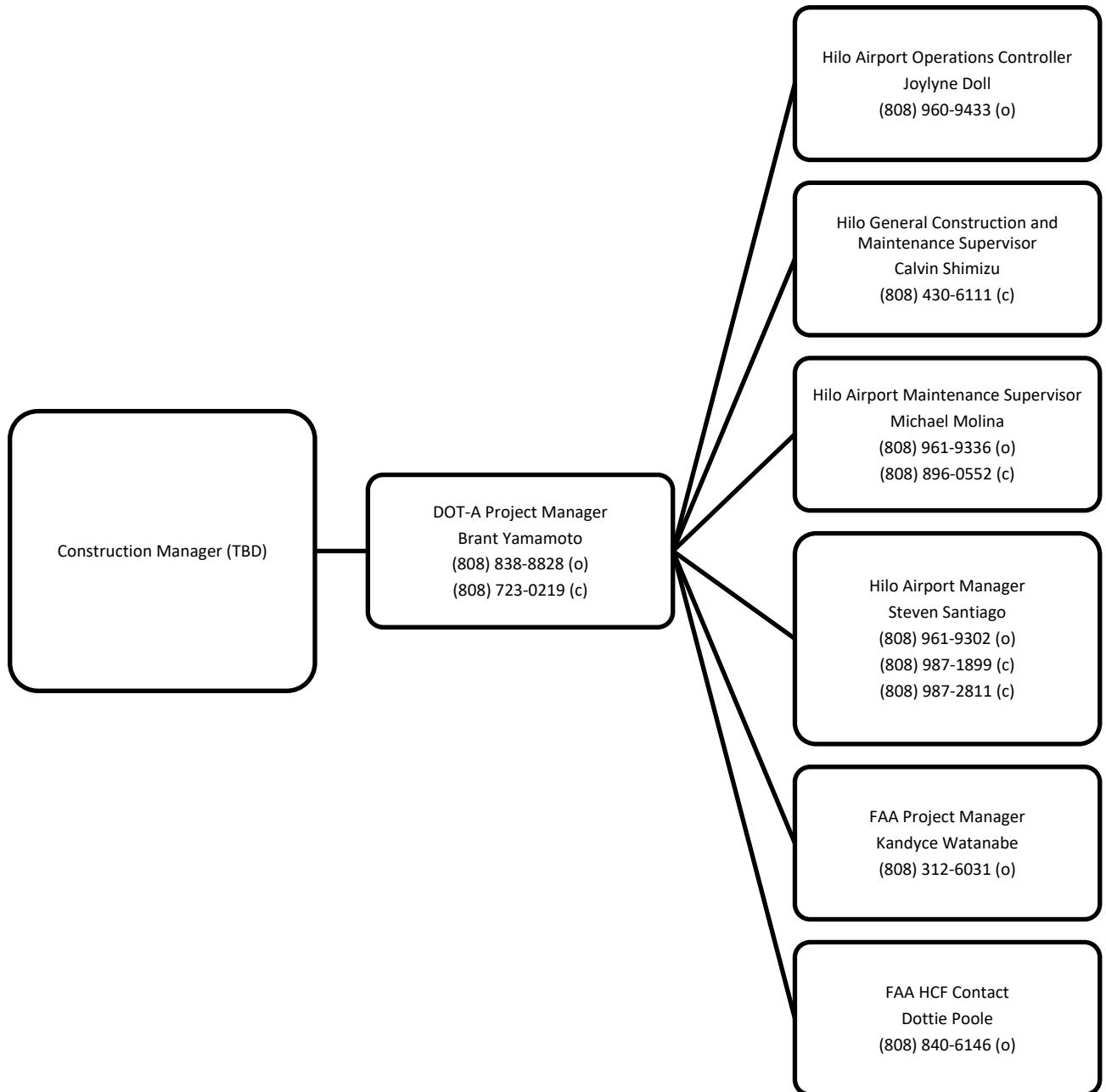
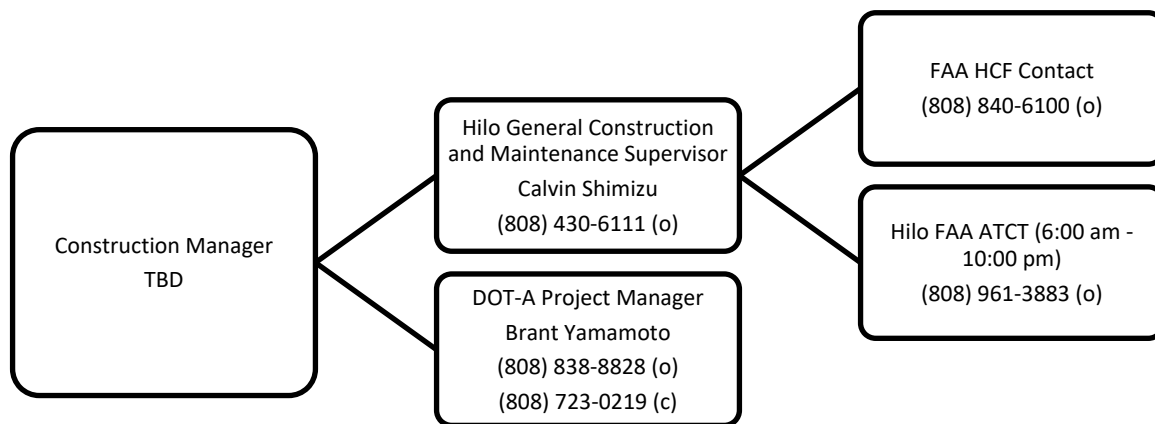


Exhibit 1 (Continued)

Flow Chart for Canceling NOTAMs



APPENDIX A

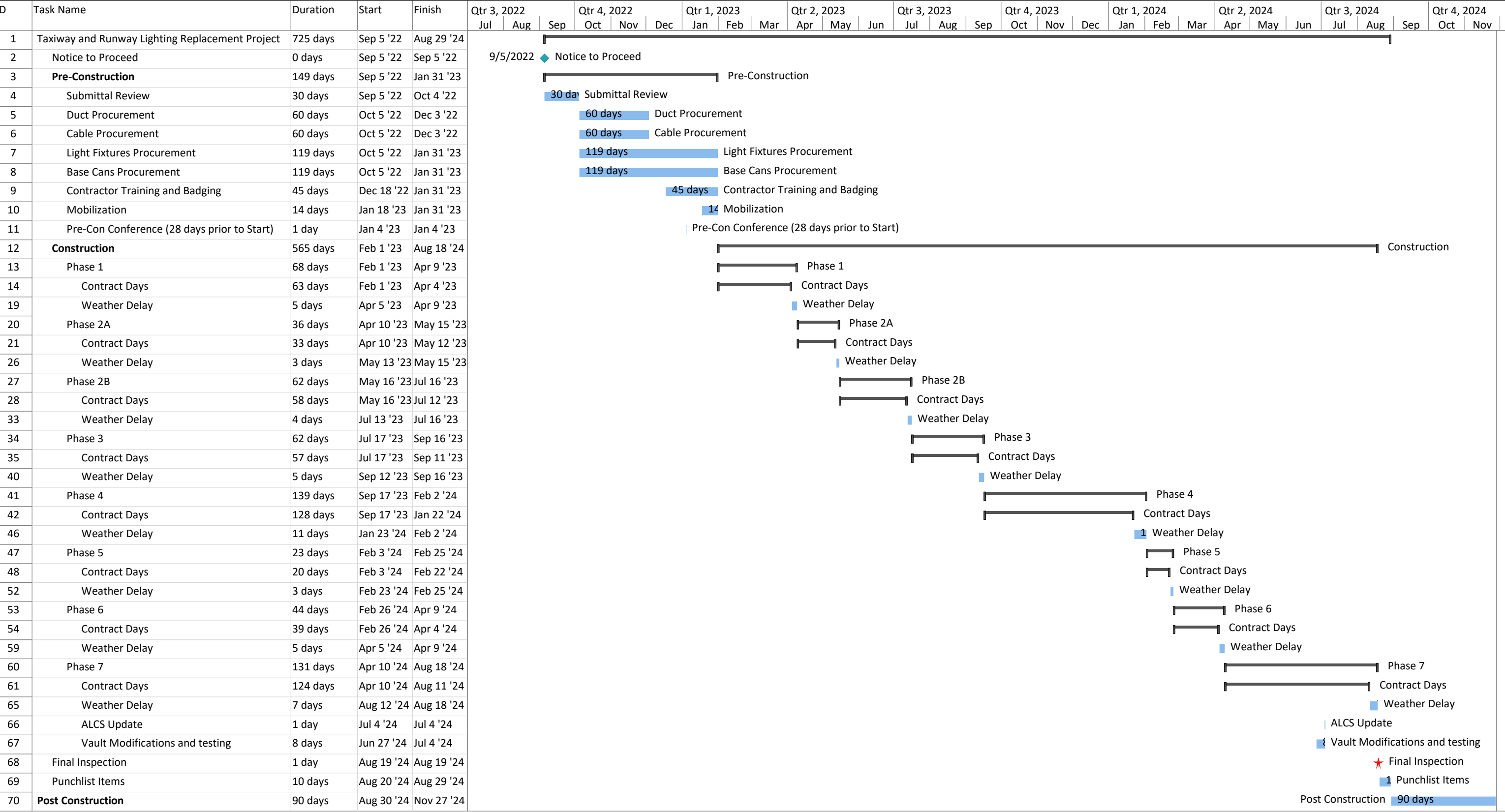
CSPP Drawings

Not physically included -
Refer to Drawings GC001 – GC301 of the construction plan set

APPENDIX B

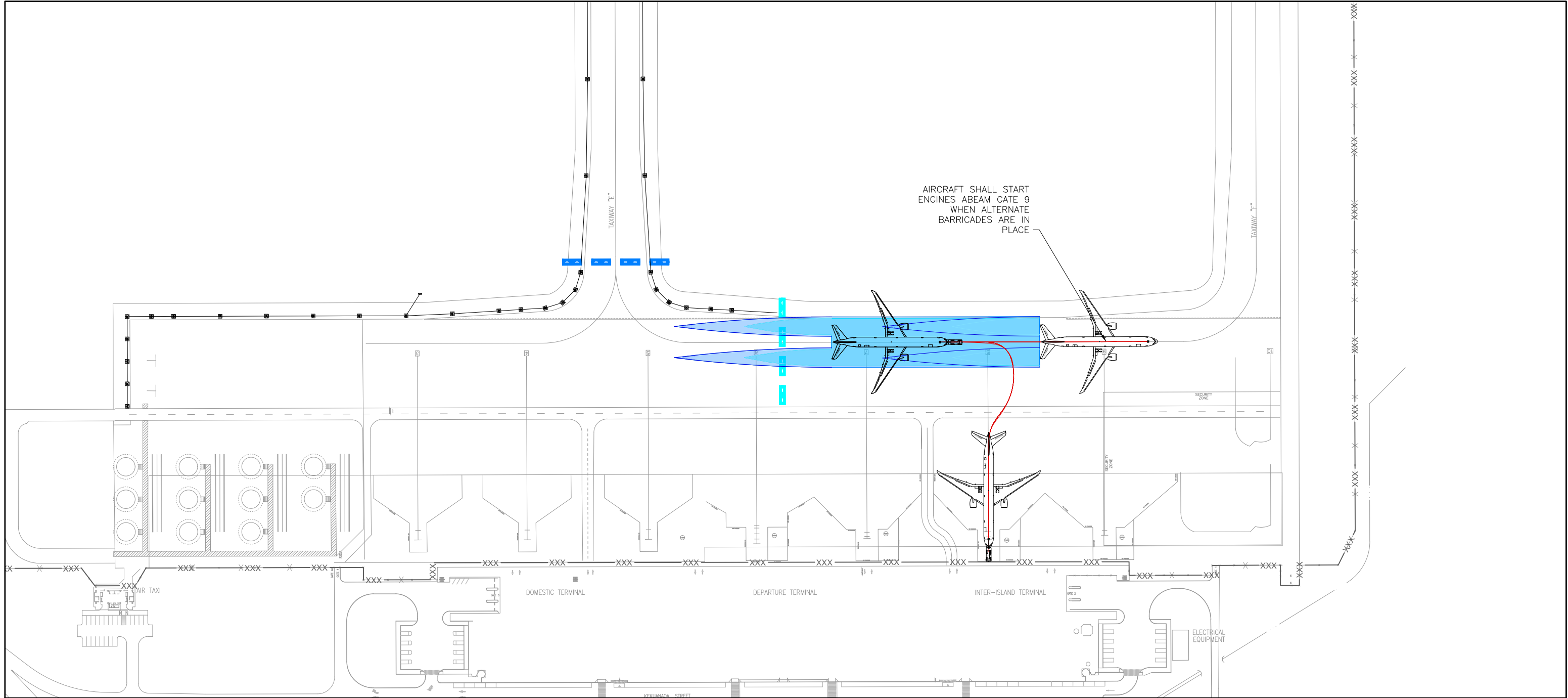
Anticipated Construction Schedule

Hilo International Airport
Taxiway and Runway Lighting Replacement Project
Construction Schedule



APPENDIX C

Jet Blast Analysis Plans



LEGEND:

- 35 - 49 MPH JET BLAST AREA
- 50 - 99 MPH JET BLAST AREA
- 100 - 149 MPH JET BLAST AREA
- 150 - 199 MPH JET BLAST AREA
- 200 - 249 MPH JET BLAST AREA
- 250+

FILE NAME: 2022.02.01-ito-jet blast.dwg
PLOT DATE: 2/1/2022 5:18:37 PM



Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

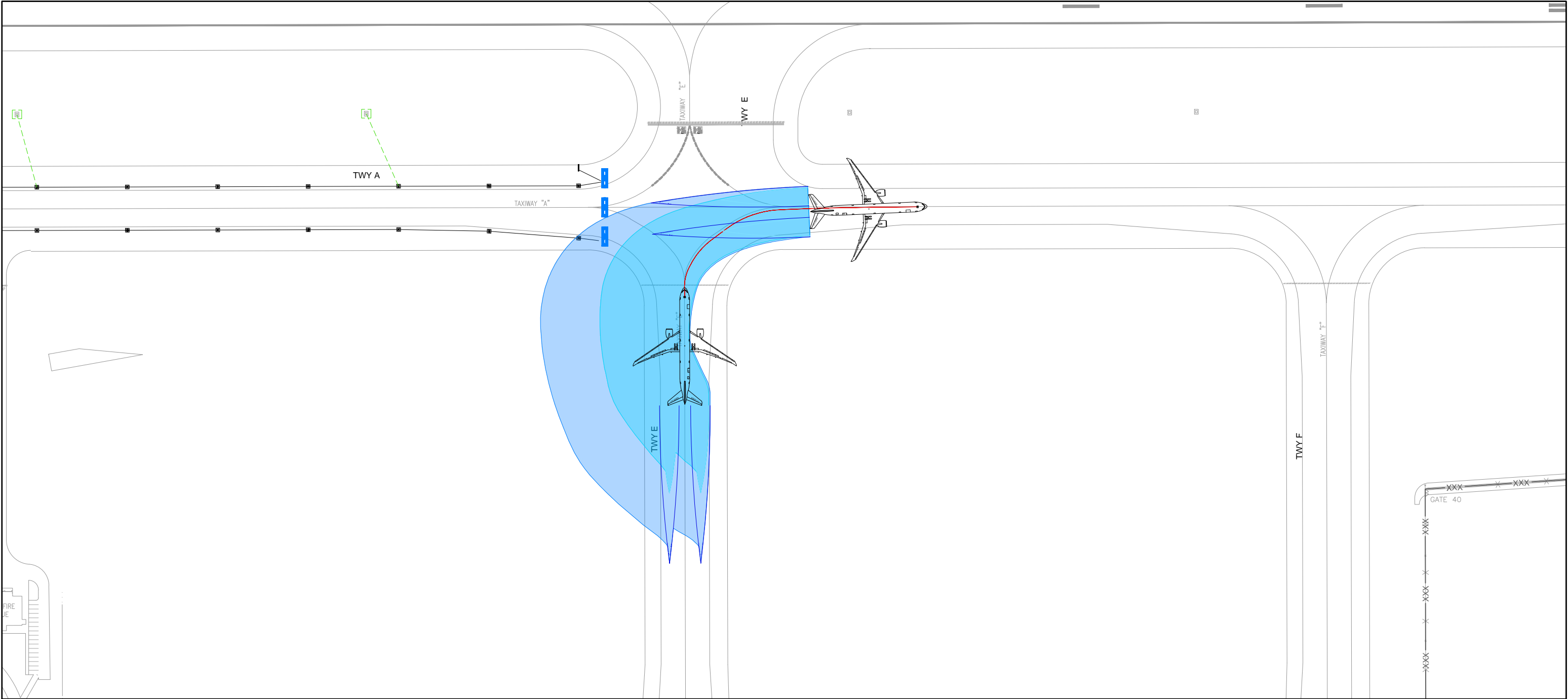
HDOT PROJECT NUMBER: AH1021-19

JET BLAST ANALYSIS
PHASE 02A

DATE: 2022.02.01

REV NO:

EXHIBIT NUMBER



LEGEND:

- 35 - 49 MPH JET BLAST AREA
- 50 - 99 MPH JET BLAST AREA
- 100 - 149 MPH JET BLAST AREA
- 150 - 199 MPH JET BLAST AREA
- 200 - 249 MPH JET BLAST AREA
- 250+

FILE NAME: 2022.02.01-ito-jet blast.dwg
PLOT DATE: 2/1/2022 5:05:47 PM



Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

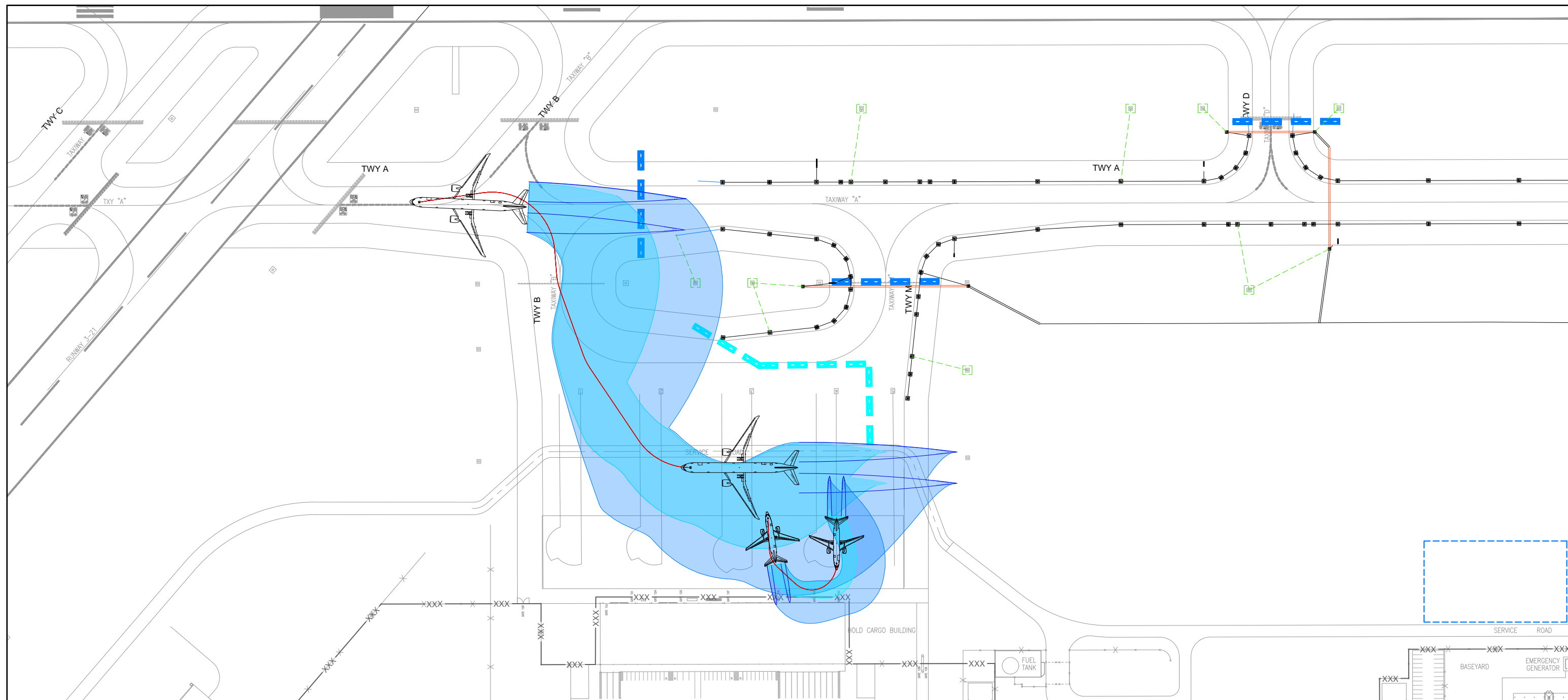
HDOT PROJECT NUMBER: AH1021-19

JET BLAST ANALYSIS
PHASE 02B







DATE: 2022.02.01

REV NO:

EXHIBIT NUMBER



LEGEND:

- | | |
|---|------------------------------|
|  | 35 - 49 MPH JET BLAST AREA |
|  | 50 - 99 MPH JET BLAST AREA |
|  | 100 - 149 MPH JET BLAST AREA |
|  | 150 - 199 MPH JET BLAST AREA |
|  | 200 - 249 MPH JET BLAST AREA |
|  | 250+ |



Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

HDOT PROJECT NUMBER: AH1021-19

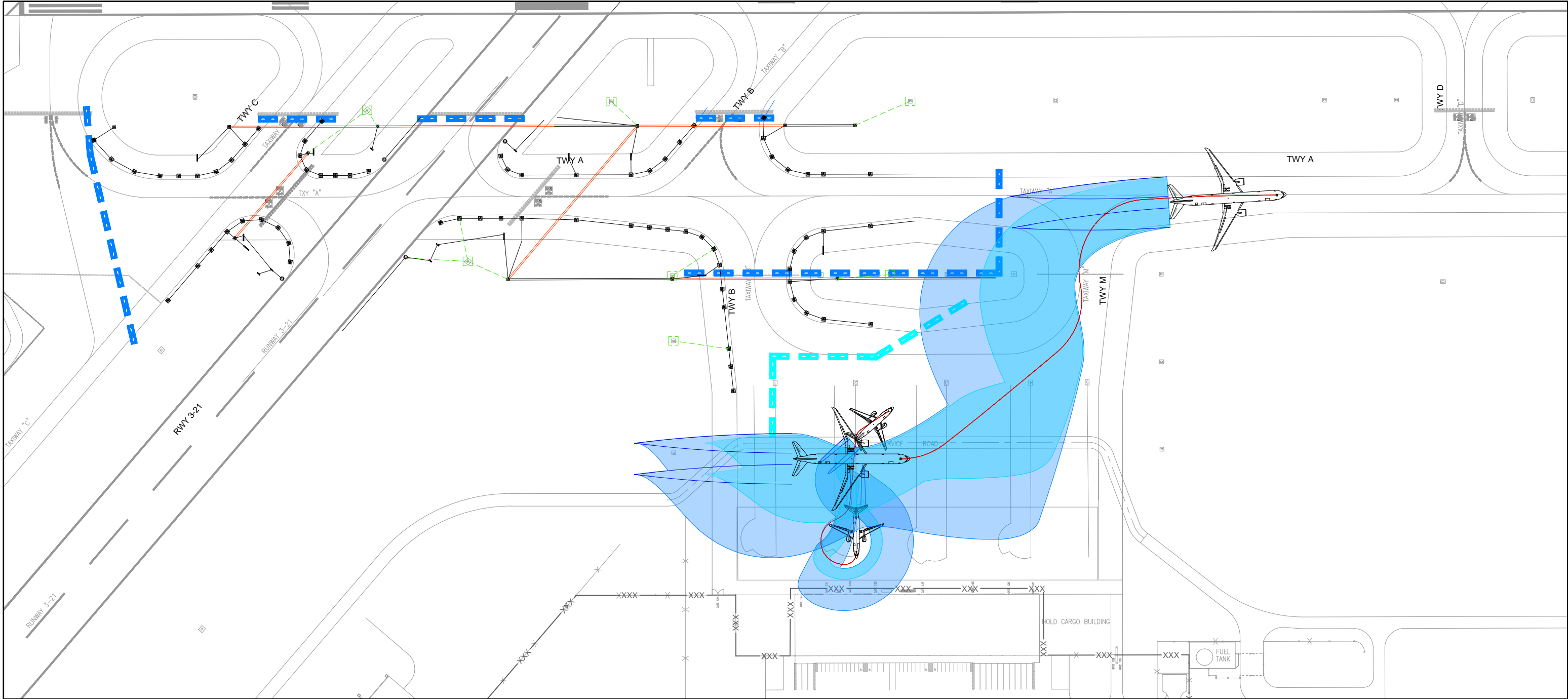
JET BLAST ANALYSIS
PHASE 02B

DATE:	2022.02.01
-------	------------

REV NO:

EXHIBIT NUMBER

3



LEGEND:

- 35 - 49 MPH JET BLAST AREA
- 50 - 99 MPH JET BLAST AREA
- 100 - 149 MPH JET BLAST AREA
- 150 - 199 MPH JET BLAST AREA
- 200 - 249 MPH JET BLAST AREA
- 250+

FILE NAME: 2022.02.01-ito-jet blast.dwg
DATE: 2/1/2022 7:08:03 PM



Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

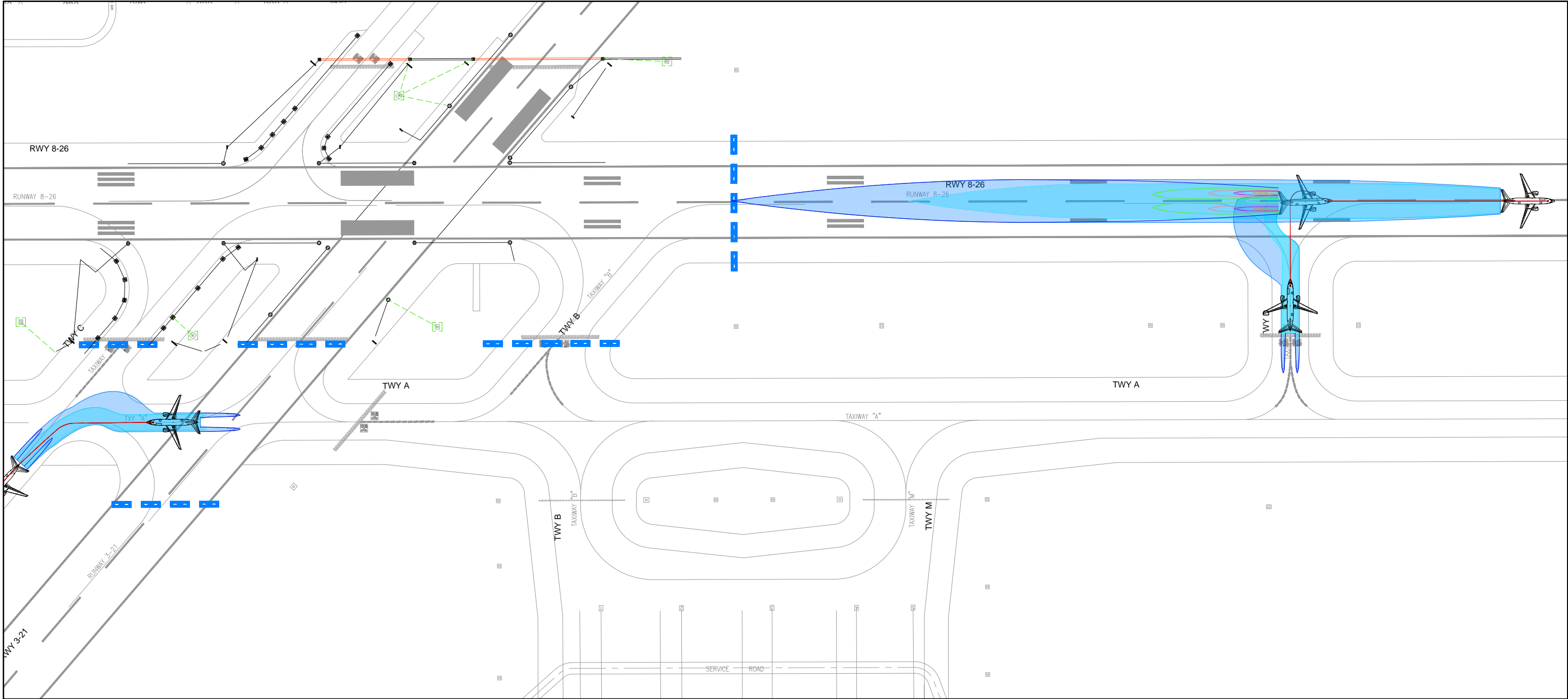
HDOT PROJECT NUMBER: AH1021-19

JET BLAST ANALYSIS
PHASE 03

DATE: 2022.02.01

REV NO:

EXHIBIT NUMBER



LEGEND:

- 35 - 49 MPH JET BLAST AREA
- 50 - 99 MPH JET BLAST AREA
- 100 - 149 MPH JET BLAST AREA
- 150 - 199 MPH JET BLAST AREA
- 200 - 249 MPH JET BLAST AREA
- 250+

FILE NAME: 2022.02.01-ito-jet blast.dwg
PLOT DATE: 2/1/2022 7:07:13 PM



Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

HDOT PROJECT NUMBER: AH1021-19

JET BLAST ANALYSIS
PHASE 06

DATE: 2022.02.01

REV NO:

EXHIBIT NUMBER

Taxiway and Runway Lighting Replacement at Hilo International Airport

Safety Risk Assessment Panel Meeting

Safety Risk Management Document



**State of Hawaii
Department of Transportation
Airports Division**



**SRMD Version 1.0
May 2, 2022**

Sponsor: Greg Garcia

Prepared by: BASES

Version No.: 1.0 (draft)

Change Control and Version Tracking

SRMD Action/Change	Date	Version
Pre-SRA Panel Meeting with all stakeholders	November 9, 2021	--
HDOT-A SRA Panel Meeting	March 30, 2022	--
Draft SRMD distributed to Panel Members for comment	May 2, 2022	1.0
Panel Member comments on Draft SRMD due	May 13, 2022	1.0
Final SRMD routed for signatures		
Final SRMD with signatures distributed		

Signature Page

Title: Taxiway and Runway Lighting Replacement at Hilo International Airport, Safety Risk Management Panel Meeting, Safety Risk Management Document

Initiator: Greg Garcia

Initiator's Organization: HDOT-A

Initiator's Phone Number: (808) 838-8829

Submission Date: May 2, 2022

SRMD Version: 1.0 (draft)

Risk Acceptance Signature:

Steven Santiago – Manager, Hawaii District

Date

Ross Higashi – HDOT-A Deputy Director

Date

Proposal Rejection:

N/A
Signature, Name and Organization

Date

Table of Contents

Change Control and Version Tracking	2
Signature Page	3
Executive Summary	6
Introduction and Background	10
Section 1 – Current System / Baseline.....	14
Section 2 – Proposed Change	16
Section 3 – Safety Risk Management Planning and Impacted Organizations.....	51
Section 4 – Assumptions.....	52
Section 5 – Phase 1: System Description.....	54
Section 6 – Phase 2: Identified Hazards	55
Section 7 – Phases 3 & 4: Hazard Analysis and Risks Assessed.....	60
Section 8 – Phase 5: Treatment of Risk / Mitigation of Hazards.....	68
Section 9 – Tracking and Monitoring Hazards	69

List of Figures

Figure 1: Risk matrix	8, 61
Figure 2: ITO Airport Diagram (via FAA)	15
Figure 3: Construction and Safety Notes	27
Figure 4: Construction Safety Details	28
Figure 5: Contractor Staging and Access Plan	29
Figure 6: Phasing Notes and Liquidated Damages	30
Figure 7: Overall Phasing Plan	31
Figure 8: Phase 1	32
Figure 9: Phase 1	33
Figure 10: Phase 2A	34
Figure 11: Phase 2A	35
Figure 12: Phase 2B	36
Figure 13: Phase 2B	37
Figure 14: Phase 3	38
Figure 15: Phase 3	39
Figure 16: Phase 4	40
Figure 17: Phase 4	41
Figure 18: Phase 5	42
Figure 19: Phase 5	43
Figure 20: Phase 6	44
Figure 21: Phase 6	45
Figure 22: Phase 6	46
Figure 23: Phase 7	47

Figure 24: Phase 7.....	48
Figure 25: Airspace Plan.....	49
Figure 26: Survey Control Plan	50

List of Tables

Table 1: Hazard Risk Assessment Results.....	7
Table 2: Runway Data Summary	14
Table 3: Declared Distances	14
Table 4: SRM Panel Members, Subject Matter Experts, Meeting Attendees.....	51
Table 5: List of Hazards and the Associated System State.....	55
Table 6: Severity Definitions	64
Table 7: Likelihood Definitions.....	66
Table 8: Initial Risk Dissenting Opinion Summary (1 of 2).....	67
Table 9: Initial Risk Dissenting Opinion Summary (2 of 2).....	67

Appendices

Appendix A – Preliminary Hazard List (PHL)
Appendix B – Preliminary Hazard Analysis (PHA)
Appendix C – Panel Packet
Appendix D – Dissenting Opinions
Appendix E – Sign-In Sheets
Appendix F – SAS-1 Form
Appendix G – Ground Rules
Appendix H – Definitions
Appendix I – Roles and Responsibilities
Appendix J – Reference Documents

Executive Summary

The State of Hawaii, Department of Transportation, Airports division (HDOT-A) proposes to replace the RWY 8-26 fixtures and cans with new High Intensity Runway Edge Lights (HIRLs), replace the RWY 3-21 fixtures and cans with new Medium intensity Runway Edge Lights (MITLs), replace all the TWY fixtures and cans with new MITLs, include a counterpoise system throughout the airfield, replace guidance signs with new LED guidance signs – including foundations and asphalt mow pads, replace the constant current regulators (CCRs) sized for circuit loads, and drain light cans and handholes. Once completed, airfield safety will be enhanced for all users.

The HDOT-A implemented the Safety Risk Assessment (SRA) process into the Construction Safety Phasing Plan (CSPP) review due to the proposed changes to the airfield had presumed significant impacts to the airfield operational status and the National Airspace System (NAS). All HDOT-A led SRA preliminary and panel meetings were conducted and facilitated in accordance with the FAA Airport (ARP) Safety Management System Order 5200.11A, FAA ARP Safety Management Systems (SMS) Desk Reference, Version 1.0, FAA AC 150/5200-37 Safety Management Systems for Airport Operators, and FAA Order 8040.4B Safety Risk Management Policy.

HDOT-A conducted a Preliminary SRA meeting with Airport stakeholder groups to ensure that the panelists were sufficiently knowledgeable of the Federal Aviation Administration (FAA) Airports SMS process and understand the proposed change to airfield system. This meeting was conducted on the following date with the indicated stakeholder groups:

1. November 9, 2021, Preliminary SRA invitations were sent out to all stakeholders affected by the proposed change. HDOT-A ITO, HDOT-A AIR-EA, Jacobs, FAA ITO ATCT, FAA ITO & KOA SSC, FAA AWP SMS, FAA HNL ADO, FAA HCF, FAA HCF ATO, FAA RSO, FAA WSC NPI, FAA WSC Flight Procedures, and United Ground Express were able to participate via Teams Video conference call.

The SRA Panel meeting was conducted on March 30, 2022, with all stakeholders.

SRMP Findings

The Hazards were identified, analyzed, and assessed in an organized group discussion, based on the thorough review of the Project Proposal Summary (PPS) and the CSPP. There were eleven (11) hazards generated through the brainstorming session, documented in the Preliminary Hazard List (PHL). The Safety Risk Management Panel (SRMP) evaluated the eleven (11) hazards in the PHL, determining nine (9) credible hazards for further evaluation in the Preliminary Hazards Analysis (PHA) worksheet.

The SRMP identified four (4) hazards, evaluating them based on their most credible effect. Each hazards risk analysis resulted with a Low Initial Risk. These potential hazards will be monitored by the HDOT-A and the Construction Manager, addressed as needed during the weekly construction project meetings. See Table 1 below for summary.

Table 1: Hazard Risk Assessment Results

(1) Hazard ID	(2) Hazard Description	(7) Effects	(12) Initial Risk	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Pre-requisite for accident or incident	Potential Outcome or harm of the hazard if it occurs in the defined system state; worst credible	Conditions, characterized by qualities, in which a system can exist; worst credible	Risk status predicted to occur when recommended controls or requirements are verified
ITO-LTG-1	Pilot LOSA	Runway incursion	4D – Low	N/A
ITO-LTG-2	Vehicle Driver LOSA	Runway incursion	4D – Low	N/A
ITO-LTG-3	Controller LOSA	Runway incursion	4D – Low	N/A
ITO-LTG-4	RWY excursion on shortened RWY 26	Injury to passengers / personnel	4D – Low	N/A
ITO-LTG-5 (REMOVED)	Attempting landing on RWY 3 or 21 when closed	N/A	N/A	N/A
ITO-LTG-6 (REMOVED)	Flight crew confusion when landing on shortened RWY 26 with discrepancy between lighting, signage, and markings	N/A	N/A	N/A
ITO-LTG-7 (REMOVED)	Lack of communication with tower of any unanticipated work overrun of any movement area	N/A	N/A	N/A
ITO-LTG-8 (REMOVED)	Spacing on arrival to allow for back-taxi	N/A	N/A	N/A

	from approach control			
ITO-LTG-9 (REMOVED)	RWY incursion by workers/equipment	N/A	N/A	N/A

Severity Likelihood	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A					
Probable B					
Remote C					
Extremely Remote D		ITO-LTG-1 ITO-LTG-2 ITO-LTG-3 ITO-LTG-4			
Extremely Improbable E					

Figure 1: Risk matrix

High Risk – Unacceptable
Medium Risk – Acceptable with Mitigation
Low Risk – Acceptable

The SRMP applied the SRM process determining that the ITO TWY and RWY Lighting Replacement project can be introduced into the NAS with an acceptable level of risk (See Figure 1 above). Appendix F provides the SAS-1 Form 5200-8 Signature Page, Signifying SRMP member's concurrence of this Safety Risk Assessment for the Taxiway and Runway Lighting Replacement at Hilo International Airport project.

DRAFT

Introduction and Background

Hilo International Airport (ITO) is a small hub airport located on the Island of Hawaii. ITO is owned and operated by the State of Hawaii, Department of Transportation, Airport Division servicing domestic, interisland carriers, commuter/air taxi, air cargo, helicopter (tour operators), military, and general aviation. Airfield facilities include two asphalt runways (Runway 3-21 at 5,600' x 150' and Runway 8-26 at 9,800' x 150'), taxiways, aprons, navigational aids (Runway 26 ILS, VORTAC, DME, PAPI and Runway 3 VASI). The FAA Airport Traffic Control Tower is open 0600-2200 HST daily.

The project is justified to repair the existing airfield electrical edge lighting system that has collapsed conduits or are fused and cannot open. There is an acute need for major upgrades to electrical system. The counterpoise lightning protection system is needed and non-existent for most of airfield. The outdated guidance signs will be replaced with new LED models. Improvements to the electrical system drainage is needed to address the water saturation contributing to acceleration of the system degradation. New edge light fixtures, cans and duct banks with new drainage features will be installed.

The HDOT-A utilized their SRA facilitator services consultant to conduct all SRA preliminary and panel meetings in accordance with the FAA Airports (ARP) Safety Management System (SMS) Order 5200.11A, FAA Order 8040.4B Safety Risk Management Policy, and FAA ARP SMS Desk Reference, Version 1.0. A series of preliminary SRA meetings were conducted using a systematic approach to prepare for the final SRA panel meeting. The meetings were scheduled with stakeholder groups as they reviewed the CSPP Phasing, and Barricade plan provided by the designer. The following outlines the meeting dates and stakeholder groups that were invited. However, it is not an indicator of the actual attendance, please refer to Appendix E Sign-In Sheets.

Preliminary SRA Meeting Date	Stakeholder Group	Purpose
November 9, 2021	HDOT-A ITO, HDOT-A AIR-EA, Jacobs, FAA ITO ATCT, FAA ITO & KOA SSC, FAA AWP SMS, FAA HNL ADO, FAA HCF, FAA HCF ATO, FAA RSO, FAA WSC NPI, FAA WSC Flight Procedures, and United Ground Express.	To review the phasing for the field investigations with all stakeholders and develop to an acceptable level by all parties

As the preliminary meeting was conducted with all stakeholders, an SRA briefing on the FAA ARP SMS process, roles and responsibilities, and ground rules were presented. The ground rules provided participants the opportunity to ask questions and have their concerns addressed prior to conducting the final SRA Panel Meeting. The participants were reminded of the ground rules. Specifically, “the absence of an answer is understood as agreement.” This fostered open discussion with participants’ concerns, being either addressed during the meeting or placed on the issues board for future discussion.

The following provides a brief overview of the preliminary SRA meeting discussion and concerns by the stakeholder group in narrative format.

The first Preliminary SRA meeting was conducted on November 9, 2021, with all stakeholders to ensure that the drawings were at the point to have a panel meeting discussion. It was decided that this project would be conducted in eight (8) phases. The following is a recap of the discussion that took place.

- a. The overview of this project includes eight different phases. RWY 8-26 will have nightly closures, while RWY 3-21 will have a 24/7 closure for the duration of the project. A taxi route must always be maintained, with RWY 26 open while RWY 3 is closed. There will be a circumstance where both RWYs will need to be closed, but it will occur on a shortened schedule as concurred by ATC. The contractor will be given the biggest area to be able to work with maximum flexibility. This project will also consist of airfield lighting software changes to the control system being done.
- b. Phase 1 will see the Eastern portion of TWYs “A”, “E”, and “F” being closed. Barricades will be placed and will remain 24/7 for the duration of the phase. There will also be a connector at the end of RWY 26, just East of TWY “E”, at the South end of TWY “F”. The work area will be available to the contractor 24/7. The duration of this phase will be 43 calendar days, with a five-day work week. The working hours shown are 24/7, however, it only indicated a timeframe where work can be done as the contractor can complete the work during whichever time period they choose. However, the preferred working hours are 2300-0700. Parking and night operations during this phase will use Gates 6 and 7, from 2000-0600. The working hours may be adjusted to 1900-0500 in order to not block the gates for United Airlines. It was questioned as to why this phase is not broken up into subphases in order to complete the area along the apron edge lines. The phase will instead be extended with TWY “F” being closed 24/7 and TWY “E” being used for access in and out. This extension will be for the nighttime work when TWY “F” is closed. In order to open the apron, backfill will be done after the work shift. The trench will also be restored back to grade flush or within 3 inches. Back-taxi will be required for arrivals on RWY 8 that are unable to turn off to TWY “E”. Any departing aircraft on RWY 26 will need to taxi all the way to the end of the RWY. A 12-hour closure, from 2000-0800 may be preferred as an option to get work done. The normal nighttime working hours of 2300-0700 will be kept, with the working hours of 2000-0800 used for portions that need extra time. A separate phase will be used for TWY “A”, and it was decided that the working hours for each phase would be 2200-0600. Trenches will need to be backfilled each night, with TSA being restored each morning.
- c. Phase 2 will change to being open during the nighttime in order to minimize the back-taxi concerns. Duct crossing will need to be done before doing any RWY work as it is easier to do circuit connections without going back and forth into the RSA. Work will take place along TWY “A” and the RWY. TWY “A” will be closed from TWY “B” to TWY “F”, with barricades along TWY “M” to the cargo ramp. The work to restore to grade will affect Gate 3 during the hours of 0000-0600. The rest of the apron work will be 2200-0600, with other work along TWY “E” also being 2200-0600. Drilling on TWY “E” will have the hours of 2000-0600, though the duration will increase.
- d. Phase 3 will have work moving West on TWY “A”, as work to the East will be completed. This phase will be also changed to the nighttime working hours of 2200-0600. A jet-blast analysis will need to be done to show where hazards exist. This analysis will be used to determine a model for a new stop line to power out.

- e. Phase 4 will see all the work on TWY “A” complete. Work will take place on RWY 8-26, East of RWY 3-21. This phase will have a duration of 89 calendar days, with nightly closures 5 nights per week. The working hours are 2300-0700, though it may be changed to 2200-0600. A media release will need to be distributed to the community as night work will be done on RWY 3-21 to trench and restore everything in the RSA back to a safe condition nightly. The trenches will be backfilled with a medium-strength concrete, which will not need to be compacted to 3” below grade. Edge transition will help avoid loss of directional control for an aircraft excursion. Backfill will only need to be to the top of the grade as needed.
- f. Phase 5 will take place on the West side of RWY 3-21. TWY “C” will remain open, which will allow up to ADG-III aircraft. A security person will need to be present throughout the duration of these phases.
- g. Phase 6 will have work impacting both the RWYs. A temporary relocated threshold on RWY 8-26 will be used, just West of TWY “D”. This TWY will also become the primary entrance and exit TWY at night. The RWY will be open at full-length during the day and will be closed at night, with the working hours of 2200-0600. The duration of this phase will be 42 calendar days. TWY “D” will be the last available exit for RWY 26 arrivals. If departures are needed at the RWY 8 relocated threshold, there is only 1,300’ between it and the work area. However, United and Southwest Airlines are unable to use the shorter distance. To accommodate this, lights will be switched to a shortened condition at the start of the shift, before switching them back. NAVAIDs will be shut down when operating in on the relocated threshold condition, assuming that the localizer is shutoff. The ILS will be deactivated each night for the nighttime closure of the RWY. Flaggers will not be needed for this phase, but properly trained radio personnel to help with escorting will be required. A security person will also be required to allow access to the gate. It is proposed that the West end of the RWY will be closed. RWY 8 will allow departures as there is an estimated work area of 1,300”. The duration for this portion of work will be 30 nights, spanning 42 calendar days. Option 1 will be to turn off all the lights West of the relocated threshold for the entire phase to stay shortened. Option 2 will be to switch the lights on and off at the beginning and end of the shift. The temporary threshold lights will be moved further West to clear TWY “D”. Landings and departures will be allowed on RWY 26, and RWY 8 will not allow arrivals. A note to not park equipment on the 150’ RWY will be added. RWY 8-26 will see the ILS shutdown. . There is a 2 hour notification procedure in cspp, for HCF and others on a Go-No Go for work each night.
- h. Phase 7 will be split into a separate work schedule to have as a bid alternate. It is anticipated that a seconds schedule will be awarded at the same time. If it is unable to award Phases 7 and 8, this work can be removed at the end of Phase 6. Maintenance can be scheduled with closures. TWY “L” has been closed for pavement and painting prior to this project. This phase will have an anticipated duration of 24 days, with working hours being 24/7. TWY “C” work along the ramp will be changed to the working hours of 2000-0800, with subphases created. The RWY will be closed with NAVAIDs shutdown for the duration of the phase. Barricades will be set to ADG-V offset. Aircraft would need to go along the VSR for occasional access in and out during this phase.
- i. Phase 8 will happen within the duration of Phase 7. Work will take place inside the TWY “L” TOFA, which will cut off access to the National Guard. Work on TWY “L” will be

prioritized and will need to have a short duration. The working hours will be nighttime only, 2000-0800.

At the conclusion of this preliminary SRA meeting with all the FAA offices, airlines, military, general aviation, and other stakeholders, it was preferred another PreSRA be conducted due to the significant changes in the CSPP.

The State and designer were able to refine the Phasing and Barricade Plan, the CSPP narrative and prepare for the SRA Panel review. The SRA Panel meeting was conducted on March 30, 2022.

DRAFT

Section 1 – Current System / Baseline

Hilo International Airport (ITO) is a small hub airport owned and operated by the State of Hawaii, Department of Transportation. It is located on the east side of the Island of Hawaii. ITO provides service for commercial air carrier, air cargo, air taxi, corporate, military, and general aviation flights, as well as helicopter operations.

It is a Part 139 certified public use commercial service airport with two runways and multiple parallel and interconnecting taxiways (See Figure 2). Runway 3-21 is 5,600' x 150' with published declared distances (See Table 3). Runway 8-26 is 9,800' x 150' and is the primary commercial service runway. Both runways and their approaches to each end have a Very High Frequency (VHF) Omnidirectional Range/Distance Measuring Equipment (VOR/DME) or Tactical Aircraft Control and Navigation (TACAN) approach procedure, and Precision Approach Path Indicator (PAPI) or Visual Approach Slope Indicator (VASI)'s. Runway 21 has added Area Navigation (RNAV) approach. Runway 26 has an additional ILS Approach and a RNAV approach.

The Airport Traffic Control Tower is open 0600 to 2200 daily. Runway 3-21 is closed to turbine aircraft 1800-0600. ITO serves a small category of helicopter tour operators, however, there is no Final Approach and Takeoff (FATO) helipad marking available.

Table 2: Runway Data Summary

Item	Runway 03/21		Runway 08/26	
	03	21	08	26
Width	150'		150'	
Length	5,600'		9,800'	
Marking Type	Non-Precision		Precision	
Part 77 Approach	Visual	Non-Precision	Visual	Precision
Navigational Aids	None	RNAV	None	ILS/DME/VOR/RNAV
Visual Aids	4-box VASI	None	4-Light PAPI	4-Light PAPI
Lighting Type	None	None	ODALS	MALSR

Table 3: Declared Distances

Item	Runway 3	Runway 21
Existing TORA	5,600'	5,251'
Existing TODA	5,600'	5,251'
Existing ASDA	5,600'	5,510'
Existing LDA	5,251'	5,510'

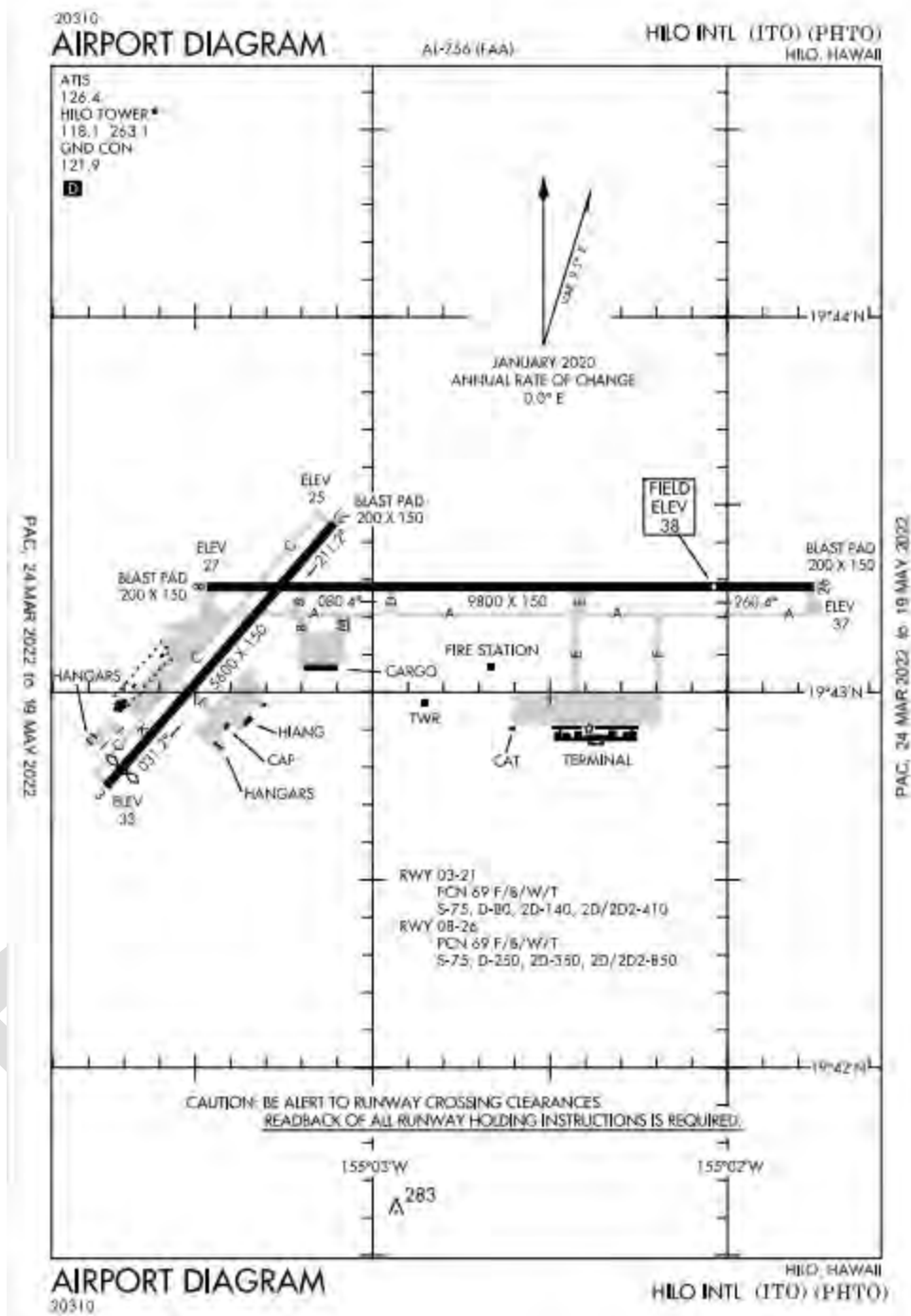


Figure 2: ITO Airport Diagram (via FAA)

Section 2 – Proposed Change

The scope of work consists of replace the edge lights along the taxiways and runways at Hilo International Airport.

This project will be constructed in seven (7) phases (Phase 1 through Phase 7), with some phases having subphases. An overview of the phasing and barricade plan is presented in Figure 7. The following stages are as proposed.

Overall Phasing Plan (GC103):

- Notes:
 - Low-profile barricades shall be placed continuously and interlocked on pavement as shown on the construction phasing plans. Generally, interlocked barricades are used for 24/7 runway or taxiway closures. Barricades shall be placed with maximum 20' gaps were used for nightly runway or taxiway closures and shall be placed 160' from the nearest adjacent active taxiway centerline, 280' from RWY 8-26 centerline, or 200' from RWY 3-21 centerline, or as otherwise shown on the construction phasing plans. Gap(s) for access through interlocking barricades shall be provided for ARFF and other emergency vehicles. Coordinate access locations with the engineer and ARFF.
 - Nighttime barricades shall be placed as shown to close taxiways, runways, or apron areas during working hours, and shall be removed prior to the end of each shift.
 - Barricade plans shall be reviewed with the engineer prior to each phase in conjunction with the CSPP and contractor SPCD to confirm requirements and restrictions per phase.
 - For runway closures requiring the placement of lighted X's, contractor shall follow the requirements in the FAA Advisory Circular 150/5370-2 (latest edition). Contractor shall supply the lighted X's.
 - Additional nighttime taxiway, runway, and partial apron closures, beyond the long-term closures shown on the plans, and/or work in progress in active taxiway areas, will be required to facilitate transitions between phases. Phase transitions may require pavement marking placement and removal, taxiway lighting, signage, circuiting changes, runway threshold relocations, and any other work required to configure the airfield as shown for each phase on the plans. Contractor shall coordinate all work in progress and closures with ITO and ATC with advance notice and submittal of work plan and barricade plan drawings as required by the CSPP. Closures and work in progress will generally need to be completed within the typical night working hours of 2200-0600, unless directed otherwise by ITO.
 - Covering of airfield light fixtures and signs will be required to facilitate nightly runway and taxiway closures. Contractor shall provide sufficient labor and resources to install covers where required each night within 30 minutes after the scheduled closure, and not more than 30 minutes prior to the reopening in the morning. Place barricades before installing light or sign covers. See phasing plans and airfield electrical plans for details on lights and signs that require covering or de-energizing for each phase.
 - Some phases require covering of airfield lights and/or signs within active RSA. Contractor shall coordinate access to RSA in advance at weekly meetings with ITO

and ATC and shall call ATC for permission to enter RSA to place and remove covers.

- Runway closures or threshold relocations require NAVAID shutdowns by the FAA, as shown on the phasing plans. Coordinate all NAVAID shutdowns at least 30 days in advance with the engineer and the FAA Hilo SSC/ATCT.
- Project coordination was a concern, therefore additional language was developed and added to the assumptions list.

Phase 1 (GC211):

- Notes:
 - The intent of Phase 1 is to replace the taxiway edge lights along Taxiway “A” East of Taxiway “E” and up to the RSA of Runway 26, all of Taxiway “F”, and between Taxiway “E” and “F” near the terminal.
 - Back-taxi will be required for Runway 8 arrivals during work hours, if unable to exit at Taxiway “E”.
 - All barricades shall be 160’ from active taxiway centerline or 280’ from runway 8-26 centerline, unless otherwise noted.
 - At the end of each work shift (2200-0600), the taxiway safety area (all areas within 107’ of the taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - Barricade location when not working on ramp area, taxiway closure allowed 2100-0500 daily.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160’ of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
 - Prior to start of work, lock-out/tag-out taxiway circuit #1 in splice cabinet at the vault. This will shut off lights along Taxiway “A” East of Taxiway “E” and Taxiway “F”. Cover energized lights leading into or within the work area each night.

Phase 1 (GC212):

- Notes:
 - During ramp night closures, aircraft may be parked in Gates 6, 7, 8, 9, and 10 prior to temporary barricades being placed but must remain overnight. Aircraft shall not be moved into or out of gates while contractor is working in the area.
 - All barricades shall be 160’ from active taxiway centerline or 280’ from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107’ of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.

- Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
- Alternate barricade location when working on ramp area, taxiway closure allowed 2100-0500 daily.
- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.

Phase 2A (GC221):

- Notes:
 - The intent of Phase 2A is to accelerate the replacement of taxiway edge lights along Taxiway "E" up to the RSA and edge lights along the apron near the terminal.
 - Gates 3, 4, and 5 will be closed during night work hours when contractor is working on the ramp lights within the alternate barricades.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
 - Alternate barricade location when not working on ramp area, taxiway closure allowed 0000-0600 daily.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
 - Cover energized lights leading into or within the work area each night.

Phase 2A (GC222):

- Notes:
 - During ramp night closures, aircraft may be parked in Gates 3, 4, 5, and 6 prior to temporary alternate barricades being placed but must remain until the barricades have been removed. Aircraft shall not be moved into or out of gates while contractor is working in the area.
 - Departing aircraft from Gates 7 or 8 shall start engines abeam Gate 9 when alternate barricades are in place.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.

- Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
- Alternate barricade location when not working on ramp area, taxiway closure allowed 0000-0600 daily.
- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.

Phase 2B (GC223):

- Notes:
 - The intent of Phase 2B is to replace taxiway edge lights on Taxiway "A" between Taxiway "B" and Taxiway "E", Taxiway "M", edge lights along Taxiway "D" outside the RSA, and near the East side of the cargo ramp.
 - The East portion of the cargo ramp will be closed when contractor is working outside the nightly barricades.
 - Contractor shall always leave at least one road accessible to ARFF.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
 - Alternate barricade location when not working on ramp area, taxiway closure allowed 2300-0700 daily.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
 - Prior to start of work, cover energized lights leading into or within the work area each night.

Phase 2B (GC224):

- Notes:
 - During ramp night closures, aircraft larger than ADG-III may be parked in hardstands 3, 4, and 5 prior to temporary barricades being placed but must remain overnight. Aircraft shall not be moved into or out of the hardstands while contractor is working in the ramp area.
 - Access into and out of hardstand 3 is available during work hours, but aircraft shall be restricted to a maximum wingspan of 118' (ADG-II).
 - Access into and out of hardstand 4 is available during work hours, but aircraft shall be restricted to a maximum wingspan of 75' (Shorts 360).
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.

- At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
- Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
- Alternate barricade location when not working on ramp area, taxiway closure allowed 2300-0700 daily.
- Preference to complete TWY A work first to facilitate circuiting connections and minimize RWY closures.

Phase 3 (GC231):

- Notes:
 - The intent of Phase 3 is to replace taxiway edge lights on Taxiway "B" from cargo ramp to the RSA of Runway 8-26 and on Taxiway "A" between Taxiway "M" and the RSA of Runway 8.
 - Lighted closed runway crosses are required on Runway 3-21 during work hours.
 - Back-taxi on Runway 8-26 is required for Runway 26 arrivals that cannot exit at Taxiway D, and for Runway 8 departures, during work hours.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - At the end of each night work shift, the RSA (all areas within 280' of the runway centerline) shall be backfilled and graded smooth so that no vertical steps exceed 3 inches in height, and no slopes exceed 5%. Loose material which may constitute a FOD hazard is also not permitted on the surface within the RSA while the runway is open.
 - Barricade location when not working on ramp area, taxiway closure allowed 2300-0700 daily.
 - Alternate barricade location when not working on ramp area, taxiway closure allowed 0000-0600 daily.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
 - The National Guard shall be allowed access at all times from Taxiway "L" to Runway 8-26.
 - Prior to start of work, cover energized lights leading into or within the work area each night.

Phase 3 (GC232):

- Notes:
 - During ramp night closures, aircraft may be parked in Hardstand 1 and 2 prior to temporary barricades being placed but must remain overnight. Aircraft shall not be moved into or out of hardstands while contractor is working in the ramp area.
 - Access into and out of Hardstand 2 is available during work hours, but aircraft shall be restricted to a maximum wingspan of 118 feet (ADG-III).
 - Runway 3-21 will be closed. Taxiway A between Taxiway M and Runway 8, Taxiway B, Taxiway K, Taxiway C between Taxiway A and Runway 21, and Taxiway C between Taxiway I and Runway 3 will be closed.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - At the end of each night work shift, the RSA (All areas within 260' of the runway centerline) shall be backfilled and graded smooth so that no vertical steps exceed 3 inches in height, and no slopes exceed 5%. Loose material which may constitute a FOD hazard is also not permitted on the surface within the RSA while the runway is open.
 - Barricade location when not working on ramp area, taxiway closure allowed 2200-0600 daily.
 - Alternate barricade location when not working on ramp area, taxiway closure allowed 2300-0700 daily.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.

Phase 4 (GC241):

- Notes:
 - The intent of Phase 4 is to replace edge lights within the Runway 8-26 RSA, from Runway 3-21 to Runway 26 threshold and connector Taxiways B, D, E, and A.
 - During work hours, Taxiway A will be closed between Taxiway F and Runway 26 and Runway 8-26 will be closed.
 - Lighted closed runway crosses are required on Runway 8-26 during work hours.
 - All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.

- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
- Some work may require short-term encroachment into the Taxiway A TOFA (160' from centerline). Contractor may be required to yield the area to aircraft if ADG-V aircraft must pass while the work is in progress. Coordinate this work in advance with the engineer.
- Prior to start of work, lock-out/tag-out Runway 8-26 circuit (R8) in splice cabinet at the vault. Cover energized lights leading into or within the work area each night.
- After installing in-pavement runway edge lights and conduit within taxiway intersections, the affected taxiway shall be closed for a continuous period of 8 days to allow for pavement cure time. This affects Taxiways A, B, D, and E. No two connector taxiways may be closed at the same time during the 8-day cure period. See sheet GC242 for additional barricade locations per each taxiway closure. Coordinate all closures in advance per the requirements of the CSPP. Taxiway A West of Taxiway F shall always remain open to aircraft.

Phase 4 (GC242):

- Notes:
 - After installing in-pavement runway edge lights and conduit within taxiway intersections, the affected taxiway shall be closed for a continuous period of 8 days to allow for pavement cure time. This affects Taxiways A, B, D, and E. No two connector taxiways may be closed at the same time during the 8-day cure period. See sheet GC242 for additional barricade locations per each taxiway closure. Coordinate all closures in advance per the requirements of the CSPP. Taxiway A West of Taxiway F shall always remain open to aircraft
 - The intent of this sheet is to show the airfield during non-working hours and the 24-hour additional barricades required for the 8-day closure. Refer to sheet GC241 for barricade locations during work hours. Cover runways exit signs and taxiway intersection guidance signs for closed taxiways, but do not cover runway hold position signs.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway B:
 - ITO Taxiway B between Taxiway A and Runway 8-26 closed.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway D:
 - ITO Taxiway D between Taxiway A and Runway 8-26 closed.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway E:
 - ITO Taxiway E between Taxiway A and Runway 8-26 closed.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway A:
 - ITO Taxiway A between Taxiway F and Runway 8-26 closed.
 - ITO Runway 8 last available exit is Taxiway E.
 - The airport manager requested to keep an area open on RWY 3 for medical night flights.

Phase 5 (GC251):

- Notes:
 - The intent of Phase 5 is to replace edge lights from Runway 3-21 RSA to Runway 8 threshold and connector Taxiway A.

- Lighted closed runway crosses are required on Runway 8-26 during work hours.
- All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
- At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
- At the end of each night work shift, the RSA (all areas within 280' of the runway centerline) shall be backfilled and graded smooth so that no vertical steps exceed 3 inches in height, and no slopes exceed 5%. Loose material which may constitute a FOD hazard is also not permitted on the surface within the RSA while the runway is open.
- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
- Prior to start of work, lock-out/tag-out Runway 8-26 circuit (R8) in splice cabinet at the vault. Cover energized lights leading into or within the work area each night.
- After installing in-pavement runway edge lights and conduit within Taxiway A intersection, the affected taxiway shall be closed for a continuous period of 8 days to allow for concrete cure time. This affects Taxiway A West of Taxiway C. The 8-day cure duration and taxiway closure may extend into Phase 6. See sheet GC252 for barricade placement.

Phase 5 (GC252):

- Notes:
 - After installing in-pavement runway edge lights and conduit within the taxiway, the taxiway shall be closed with barricades placed across the taxiway as shown for a continuous period of 8 days (24 hours per day) to allow for concrete cure time and subsequent placement of asphalt surface course. Only one connector taxiway may be closed at a time, and the work shall be sequenced accordingly. Coordinate all closures in advance per the requirements of the CSPP. Closure may extend into Phase 6.
 - The intent of this sheet is to show the airfield during non-working hours and the 24-hour additional barricades required for the 8-day closure. Refer to sheet GC251 for barricade locations during work hours. Cover Runway exit signs and taxiway intersection guidance signs for closed taxiways, but do not cover runway hold position signs.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway A:
 - ITO Taxiway A between Taxiway C and Runway 8 closed.
 - ITO Runway 26 last available exit is Taxiway C.

Phase 6 (GC261):

- Notes:
 - The intent of Phase 6 is to replace edge lights at the intersection of Runway 8-26 and Runway 3-21 and Taxiway C, within the RSA of both runways.

- During work hours, Runway 8-26 is shortened with a temporary relocated threshold, with the West 2,835' closed. Contractor shall coordinate power disconnect and reconnect with ATC prior to modifying circuit.
- Lighted closed runway crosses are required on Runway 3-21 during work hours.
- Contractor shall not park or store equipment or tools on runway, 150' width, including the closed work area at any time, to reduce the risk of collision in the event of an aircraft runway excursion. Contractor may park on shoulders or closed taxiway areas.
- All barricades shall be 160' from active taxiway centerline or 280' from Runway 8-26 centerline, unless otherwise noted.
- At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 107' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
- At the end of each night work shift, the RSA (all areas within 280' of the runway centerline) shall be backfilled and graded smooth so that no vertical steps exceed 3 inches in height, and no slopes exceed 5%. Loose material which may constitute a FOD hazard is also not permitted on the surface within the RSA while the runway is open.
- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 160' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
- Prior to start of work, lock-out/tag-out Runway 8-26 circuit (R8) in splice cabinet at the vault. Cover energized lights leading into or within the work area each night.
- After installing in-pavement runway edge lights and conduit within taxiway or Runway 3-21 intersections, the affected taxiway or Runway 3-21 shall be closed for a continuous period of 8 days to allow for concrete cure time. The work within these intersections shall be left for last in Phase 6 so that the required 8-day closures extend into and overlap with Phase 7. See sheet GC263.

Phase 6 (GC262):

- Notes:
 - The intent of Phase 6 is to replace edge lights at the intersection of Runway 8-26 and Runway 3-21 and Taxiway C, within the RSA of both runways.
 - During work hours, Runway 8-26 is shortened with a temporary relocated threshold, with the West 2,934' closed. Runway 3-21 is closed.
 - Lighted closed runway crosses are required on Runway 3-21 during work hours on Runway 8 and Runway 3-21. Lighted closed runway cross is also required on Runway 26 for closures at start and end of each work shift.
 - All Runway 8-26 lights must be covered/uncovered West of the relocated threshold. The runway will be closed for approximately 30 minutes at the start and end of each work shift to allow for this work.
 - Runway 8 temporary relocated threshold will have temporary outboard threshold lights for the duration of the phase. Relocated threshold lights shall be covered when runway is open full length.

- Active taxiway/movement area crossing requires contractor-provided qualified flagger or escorts.
- Localizer will be shut off during work hours and returned to operational conditions each morning.
- Contractor shall coordinate with the engineer, airport, and FAA at least 45 days in advance of the start of Phase 6, to plan and schedule the work. Contractor shall conduct a meeting with these groups to coordinate the specific sequence of activities, closures, timing, etc. Required to shorten the runway each night.
- All Runway 8-26 RDR signs (8 total) shall be covered each night immediately after shortening the runway and uncovered each morning prior to reopening the runway full length. Method of covering the signs shall be secured to prevent the covers from being dislodged by jet blast, etc., as approved by the engineer.
- Cover clear runway edge lights for 2,000' preceding relocated threshold, and uncover temporary amber lights installed during Phase 4, each night at start of shift. Reverse covers to restore lights to operational each morning prior to opening runway full-length.

Phase 6 (GC263):

- Notes:
 - After installing in-pavement runway edge lights and conduit within taxiway or Runway 3-21 intersections, the affected taxiway or Runway 3-21 shall be closed for a continuous period of 8 days to allow for concrete cure time. The work within these intersections shall be left for last in Phase 6 so that the required 8-day closures extend into and overlap with Phase 7.
 - The intent of this sheet is to show the airfield during non-working hours and the 24-hour additional barricades required for the 8-day closure. Refer to sheet GC261 for barricade locations during work hours. Cover Runway exit signs and taxiway intersection guidance signs for closed taxiways, but do not cover runway hold position signs.
 - Barricade location and temporary supplemental NOTAM for work on Taxiway C and Runway 3-21:
 - ITO Taxiway C between Taxiway I and Runway 3 closed.
 - ITO Taxiway C between Taxiway A and Runway 21 closed.
 - ITO Taxiway K closed.
 - ITO Runway 3-21 closed.

Phase 7 (GC271):

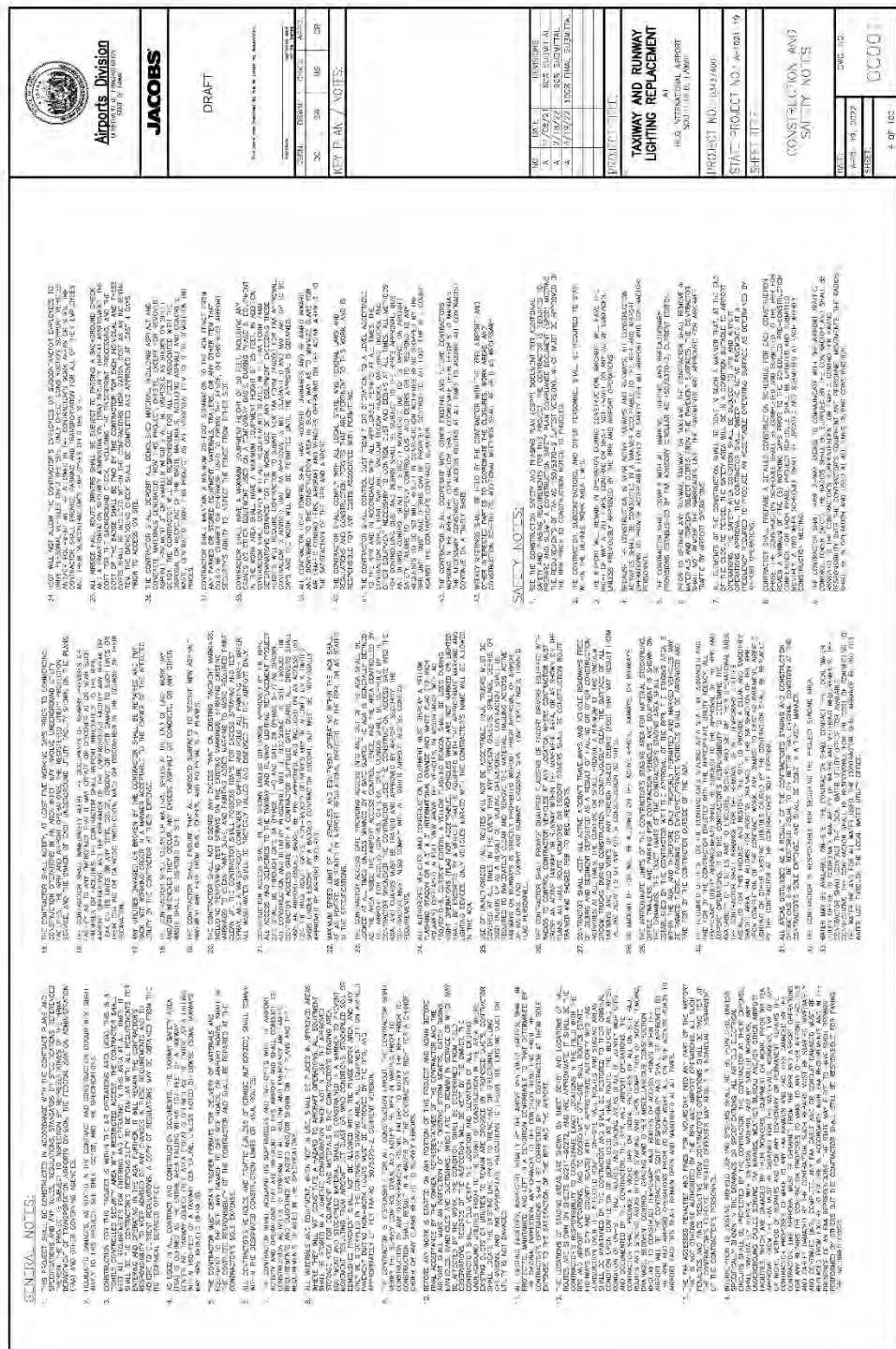
- Notes:
 - The intent of Phase 7 is to replace the taxiway edge lights on Taxiway C, Taxiway I, Taxiway J, and Taxiway K.
 - Lighted closed runway crosses are always required on Runway 3-21.
 - A portion of the Phase 7 work area is available to the contractor 24 hours per day. See sheet GC272 for additional requirements.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 86' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and

firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.

- Prior to reopening taxiways each morning, the taxiway object free area (all areas within 130' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
- At the conclusion of Phase 7, Taxiway I will be renamed to Taxiway H. Coordinate the timing of the completion of Phase 7 (and reopening of Taxiway H to aircraft) with the airport at least 45 days in advance.
- Prior to start of work, lock-out/tag-out Runway 3-21 circuit (R8) in splice cabinet at the vault. Cover energized lights leading into or within the work area each night.
- During Phase 7, it is possible that the airport may need to close Runway 8-26 for emergency maintenance or other purposes. Runway 3-21 must be re-opened to aircraft if Runway 8-26 must be closed. Therefore, although some work areas will normally be available 24-hours per day, the contractor shall conduct their work throughout Phase 7 to be prepared to re-open all closed runway and taxiways to aircraft at the end of any work shift, if required. The contractor shall assume that they will need to stop or cancel all work, clean pavement surfaces of any FOD, pick up all barricades, and reopen the runway /taxiways with as little as 12 hours' notice, twice over the course of Phase 7, at no additional cost.

Phase 7 (GC272):

- Notes:
 - The intent of this sheet is to show the non-night work hours for Phase 7.
 - At the end of each night work shift (2200-0600), the taxiway safety area (all areas within 86' of taxiway centerline) shall be restored to a condition satisfactory to the engineer, with no potentially hazardous ruts, humps, depressions, or other surface variation, and capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passing of aircraft without causing damage to the aircraft.
 - Prior to reopening taxiways each morning, the taxiway object free area (all areas within 130' of taxiway centerline) shall be cleared of any above grade obstacles including directional drilling or other construction equipment.
 - Vehicle driver familiarization was a concern for the Twy name change. ITO to update the Movement Area training and all FAA required documents/publications.
 - It was recommended to add an advisory on phasing plan for the contractor to coordinate the date that it will go active within 45 days; everything would be prepared for document update ahead of time, contractor to get actual date of that change.



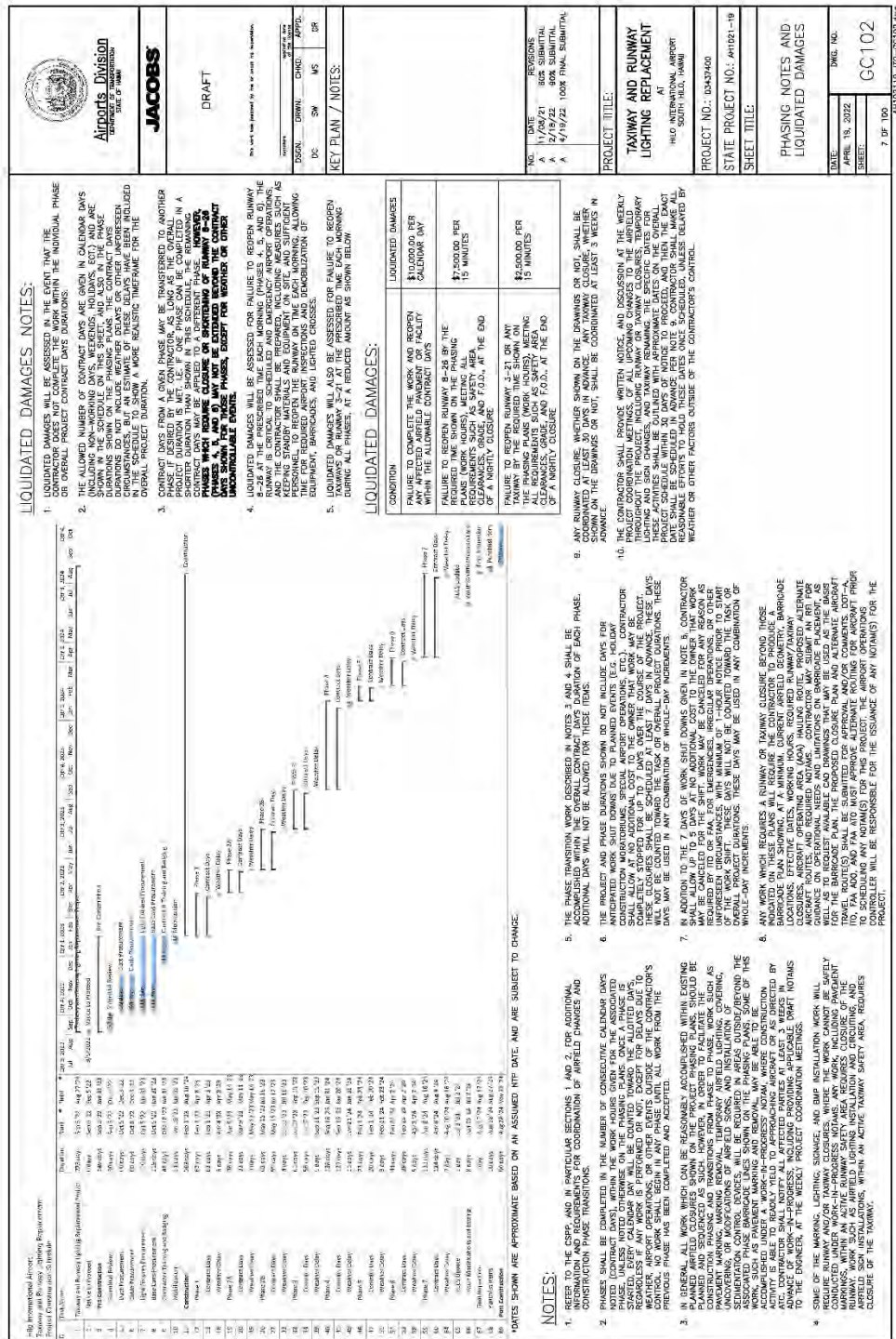


Figure 6: Phasing Notes and Liquidated Damages







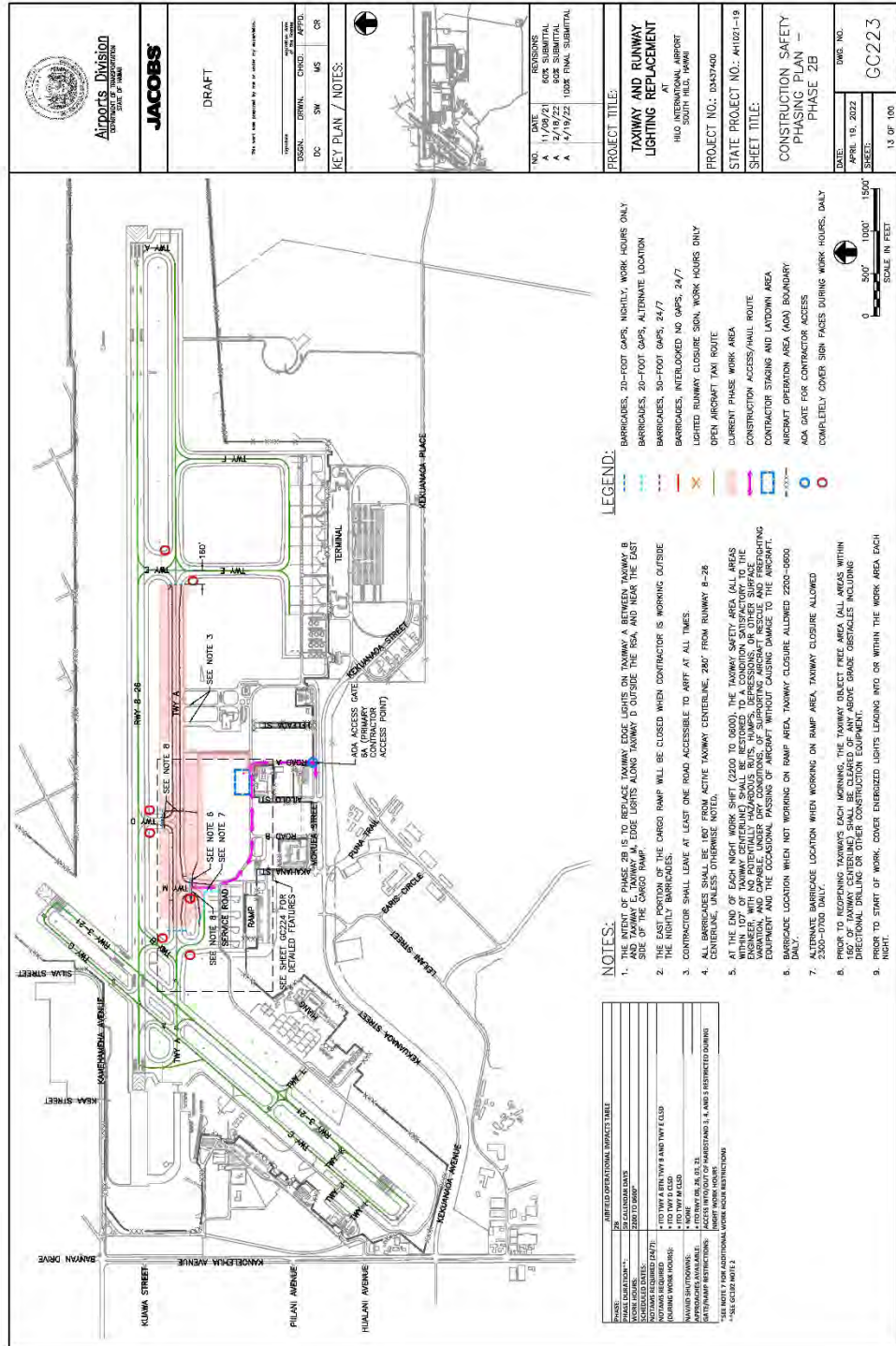


Figure 12: Phase 2B

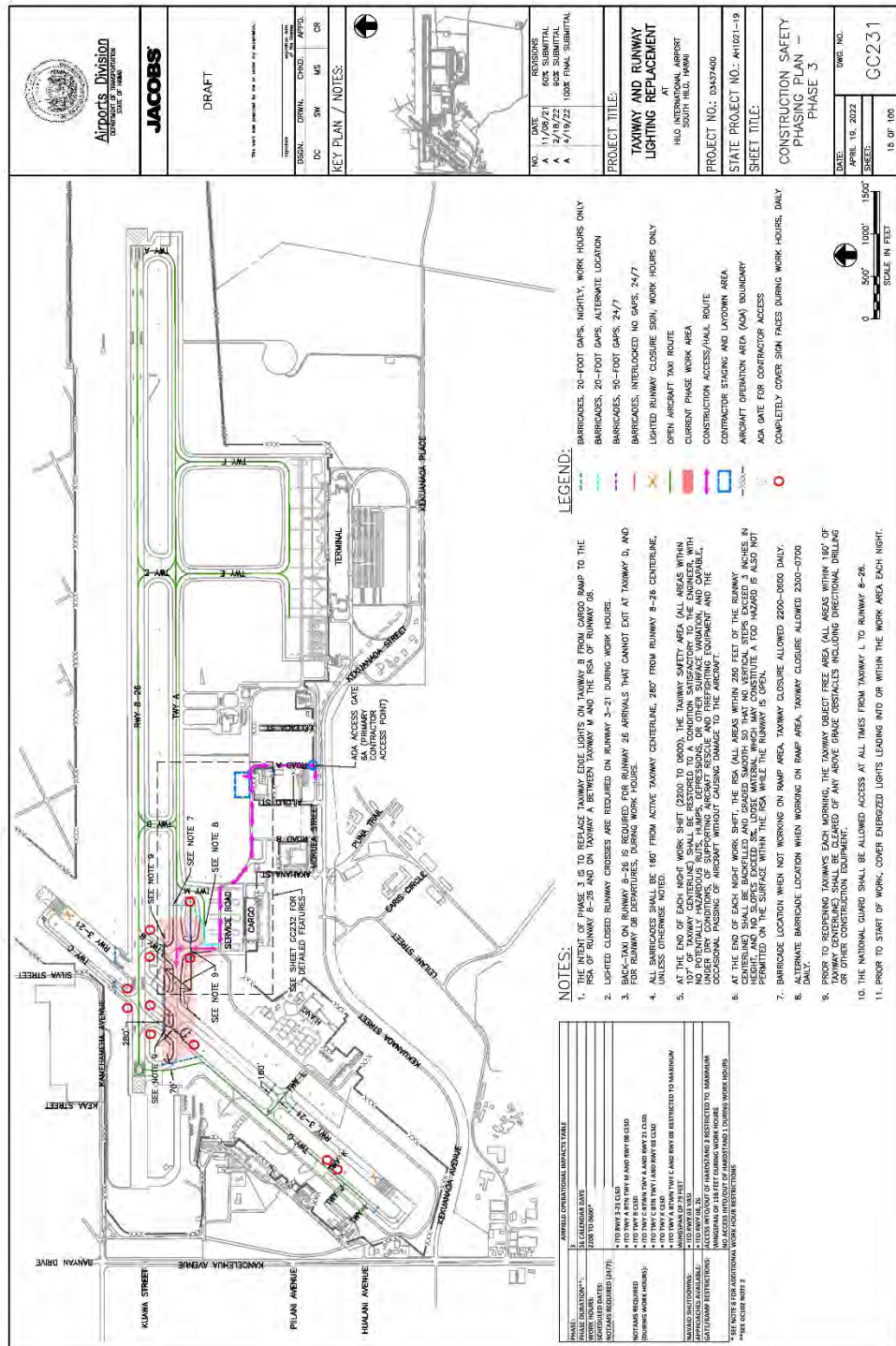


Figure 14: Phase 3





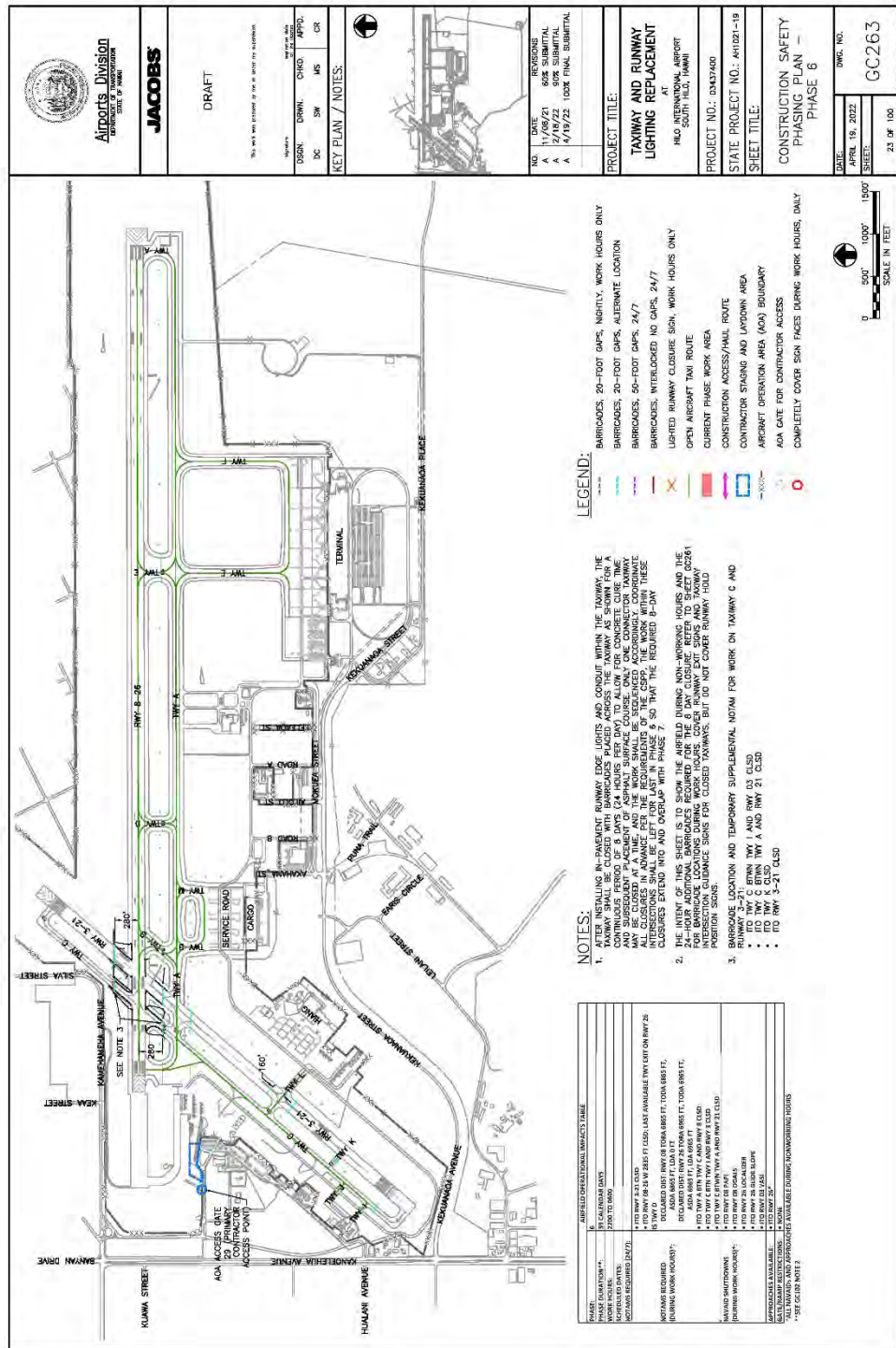














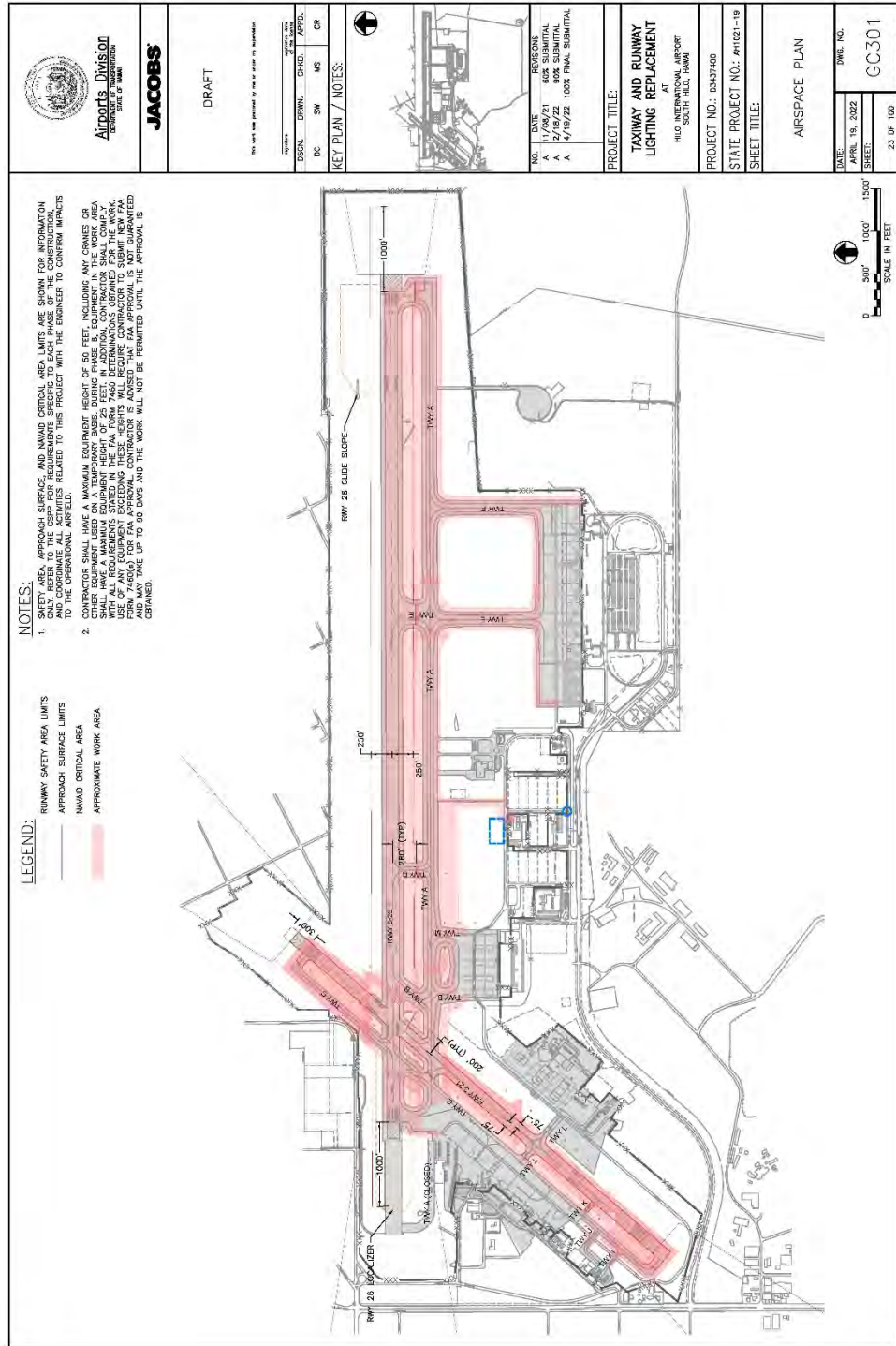


Figure 25: Airspace Plan



Figure 26: Survey Control Plan

Section 3 – Safety Risk Management Planning and Impacted Organizations

The Safety Risk Management Panel met on March 30, 2022, to assess the proposed change to the NAS and associated hazards. The facilitator worked with the HNL ADO Program Manager to identify SRMP members, Subject Matter Experts (SMEs), and obtain concurrence prior to sending out calendar invitations. All FAA Lines of Business and ITO stakeholders were included in the invitation. See Table 4 below for the list of panel meeting participants for this panel meeting. The sign-in sheets can be found in Appendix E.

Table 4: SRM Panel Members, Subject Matter Experts, Meeting Attendees

Panel Member	Organization, Position/Title	E-mail
Steven Santiago	HDOO-A ITO	steven.j.santiago@hawaii.gov
Vincent Domen	FAA ITO ATCT	vincent.domen@faa.gov
Kandyce Watanabe	FAA HNL ADO	kandyce.watanabe@faa.gov
Neil Okuna	FAA HCF ATO	neil.n.okuna@faa.gov
Joe Santoro	FAA RSO	joe.santoro@faa.gov
George Hodgson	Southwest ATC Support	george.hodgson@wnco.com
Perfecto Delmendo	AvAir Pros	p.delmendo@avairpros.com

SME	Organization, Position/Title	E-mail
Adam Tolentino	HDOT-A AIR-EC	adam.w.tolentino@hawaii.gov
Brant Yamamoto	HDOT-A AIR-EC	brant.m.yamamoto@hawaii.gov
Chris Rivera	Jacobs	chris.rivera@jacobs.com
Mike Southwick	Jacobs	mike.southwick@jacobs.com
Dakota Chauncey	Jacobs	dakota.chauncey@jacobs.com
Elizabeth Moore	FAA ITO ATCT	elizabeth.a.moore@faa.gov
Herman Smith	FAA AWP SMS Specialist	herman.smith@faa.gov
Matthew Robertson	FAA WSC NPI	matthew.d.robertson@faa.gov
Dave Clark	FAA WSC Flight Procedures	david.m.clark@faa.gov
Scott Allen	FAA RSO	scott.e.allen@faa.gov
Jeff Tarpey	AvAir Pros	j.tarpey@avairpros.com
Mika Kuamoo	Hawaiian Airlines Cargo	mika.kuamoo@hawaiianair.com

Facilitation Team	Organization, Position/Title	E-mail
Tanya Dela Cruz	Base Management, Admin Support	tanya@basesgrp.com
Dalyn DeMattos	Base Management, Tech Writer	dalyn@basesgrp.com
Dawn Ward	Base Management, Facilitator	dawn@basesgrp.com

Section 4 – Assumptions

1. All existing controls are in place (i.e., airfield training, access, tenant coordination, notification etc.).
2. Continuous incursion monitoring and outreach efforts will continue by ITO Airport and local FAA offices.
3. No anticipated significant increase in commercial service, cargo, general aviation and military operations for ITO. Current aircraft operational state is based on pre-pandemic operational numbers.
4. No planned equipment upgrades in NAVAIDs or communication by the FAA.
5. Controllers and vehicle operators will be briefed on runway changes and procedures.
6. Contractor will have Radio personnel to control and monitor the radio (sole responsibility) will be onsite during construction.
7. Work will not be allowed on the airfield unless an approved CSPP by FAA and HDOTA is on file.
8. Ongoing construction meetings will address operations during upcoming phases to ensure attendee awareness of impending construction work and associated operational impacts, including runway and taxiway section closures.
9. Low profile barricade phasing and schedules will be provided to affected parties including the airlines, ATCT, contractor, CM, and District via periodic construction meetings, informational meetings, and email.
10. Construction vehicle routes, flaggers and barricades will be reviewed as indicated in the CSPP prior to the start of each construction phase.
11. Construction areas will be clearly marked with lighted low-profile barricades that will be weighted down.
12. Controllers, and vehicle operators will be briefed on runway and taxiway changes, closures, and procedures.
13. FOD checks will be completed by construction and airport personnel when movement areas are used.
14. NOTAMs will be issued for each phase and NOTAMs will be coordinated between the contractor, CM, Airport and FAA prior to each phase.
15. Airfield signage and marking will be relocated to meet standards (as applicable).
16. Minimize changes to CSPP/schedule.
17. Coordination with ongoing projects.
18. All applicable 7460-1 airspace determinations (temp equipment and permanent structures) will be completed prior to commencement of airfield work.
19. Contractor will adhere to Part 139 Construction Requirements (i.e., no 3” or greater lips, ruts, humps, bumps, etc.) and will be graded prior to reopening any Runway or Taxiway .
20. Complete an Airport Sponsor Strategic Event Submission (SEC) Form (FAA Form 6000-26) at least 45 days before construction for runway closures exceeding 24 hours.
21. During Phase 4 through Phase 6 a NOTAM will be issued notifying the non-standard mixture of LED and Incandescent runway edge lights (approximately 3-month duration).
22. The contractor shall cooperate with other existing and future contractors working in the area, the contractor shall coordinate their efforts to maintain the necessary construction access routes at all times. (FROM PLAN SHEETS)

23. Weekly meetings shall be held by the contractor with the RPR, Airport and other interested parties to coordinate the closures, work areas, and construction schedules. Additional meetings shall be held as necessary. (FROM PLAN SHEETS)
24. Nightly closures of Runway 8/26 will not exceed 6:00am due to impacts to airport operations.
25. Notifications will be provided to all stakeholders prior to the new taxi lane nomenclature becoming effective, including all published documentation will be updated.
26. Prior to re-opening of the new taxi lane nomenclatures, the contractor will coordinate the timing of the completion of phase 7 with the airport at least 45-days in advance.
27. During phase 2A, the Airport will coordinate with aircraft operators to ensure aircraft are towed abeam gate 9 prior to engine start-up during work hours.
28. The airport will conduct all runway and taxiway inspections prior to 1st flight as required by the Part 139 and will notify ITO tower of any unexpected changed movement area conditions. The notification will be made by verbal communication (There is an existing LOA in place).

Section 5 – Phase 1: System Description

The current system state is described in Section 1, Current System / Current Baseline. The CSPP system conditions are described in Section 2, Proposed Change. Construction bids are anticipated for mid-May 2022. This project is anticipated to begin construction February 2023, with an expected completion date of August 2024.

Shown below are the current and near future projects and events anticipated to occur at ITO that were considered for potential cumulative impacts to the airfield operations.

1. Guard Ramp, West Ramp Drainage, and Wind Cone Relocation. This project construction activity has an estimated construction start of January 2023, with an end date of August 2023. Bid advertisement is anticipated for July 2022.
2. RIMPAC takes place this year, from June-August 2022. There are no anticipated impacts with this project.
3. KOA Runway 17-35 Rehabilitation is anticipated to start construction NTP 6/13/2023, with an estimated project completion of 10/10/2024.
4. OGG Resurface Runway 2-20 is estimated to start construction NTP 12/14/2022, with an expected project completion date of 6/20/2023.

The SRMP determined that these projects are not expected to have any significant impacts with the ITO Taxiway and Runway Lighting Replacement project.

Section 6 – Phase 2: Identified Hazards

Identification of hazards in this step, considers all reasonably possible sources of hazards. According to Order 5200.11, a hazard is any existing or potential condition that can lead to injury, illness, or death to people; damage or loss of a system, equipment, or property; or damage to the environment. A hazard is a condition that is a prerequisite of an accident or incident.

During this hazard identification stage, the facilitator began by providing the panel members with some ground rules listed in Appendix G and reminded the group that, “the absence of an answer is understood as agreement.” The SRM Panel Meeting is the venue to vet out all safety concerns related to this project.

The design consultant completed their presentation of the CSPP exhibits and the facilitator provided the Panel Members a briefing on the brainstorming process. The development of the Preliminary Hazard List (PHL) allowed all panel members to list their presumed safety concerns based upon their background and subject matter expertise.

The panel identified a total of eleven (11) preliminary potential hazards as a result of the brainstorming process (Appendix A). As the SRMP reviewed the preliminary hazard list, they categorized each entry as a Cause, hazard, or Effect. In review of the PHA, the SRMP analyzed the nine (9) resulting hazards with their associated effects. The nine (9) hazards that were analyzed by the SRMP are shown in Table 5 below and in the PHA in Appendix B.

Table 5: List of Hazards and the Associated System State

(1) Hazard ID	(2) Hazard Description	(4) System State
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Pre-requisite for accident or incident	Conditions, characterized by quantities or qualities, in which a system can exist; worst credible
ITO-LTG-1	Pilot LOSA	All phases of construction
ITO-LTG-2	Vehicle Driver LOSA	All phases of construction
ITO-LTG-3	Controller LOSA	All phases of construction
ITO-LTG-4	RWY excursion on shortened RWY 26	Phase 6
ITO-LTG-5 (REMOVED)	Attempting landing on RWY 3 or 21 when closed	N/A
ITO-LTG-6 (REMOVED)	Flight crew confusion when landing on shortened RWY 26 with discrepancy between lighting, signage, and markings	N/A
ITO-LTG-7 (REMOVED)	Lack of communication with tower of any unanticipated work overrun of any movement area	N/A

ITO-LTG-8 (REMOVED)	Spacing on arrival to allow for back-taxi from approach control	N/A
ITO-LTG-9 (REMOVED)	RWY incursion by workers/equipment	N/A

During the SRMP PHA discussion, the following hazards were determined to be an uncontrollable event occurring independently or in combination that results in a hazard or failure. The SRMP agreed to remove these hazards as they were either recategorized as a “Cause” or included in the assumptions list or existing control. There were no objections, and these were captured under previous hazard rows, assumptions list or exiting controls that were evaluated.

- ❖ Hazard ID: ITO-LTG-5, Attempted landing on Runway 3 or 21 when closed. It was determined to be included in Pilot LOSA.
- ❖ Hazard ID: ITO-LTG-6, Flight Crew confusion when landing on shortened Runway 26 with discrepancy between lighting, signage, and markings. It was determined to be captured in the hazards analyzed.
- ❖ Hazard ID: ITO-LTG-7, Lack of communication with tower of any unanticipated work overrun of any movement area. It was determined to be captured in the assumptions list #28 as a verbal tower notification.
- ❖ Hazard ID: ITO-LTG-8, Spacing on arrival to allow for back-taxi from approach control. It was determined to be removed as ITO becomes a Class D Airport when the tower is closed.
- ❖ Hazard ID: ITO-LTG-9, Runway incursion by workers/equipment. It was determined to be included in the LOSA hazards analyzed.

The SRMP evaluated the worst credible Effect for each hazard identified. This panel used the PHA tool/technique provided in the ARP Desk Reference for the airspace determinations for the proposed plan. The PHA provided the panel members with an initial overview of the hazards present in the overall flow of the operation in this proposed change.

Description of Hazards

This step focuses on the hazard identification, including further analysis of the hazards to assist Panel Members on analyzing the safety risks. The Facilitator cultivated discussions to ensure the panel considered all credible sources of system failure, including equipment, human factors, operational procedures, maintenance procedures, and external services.

The Facilitator initiated the functional brainstorming technique as a tool to systematically identify hazards as the panel developed the Preliminary Hazard List. During the brainstorming session, the group developed a list of potential hazards associated with the project and provided the bases for the Preliminary Hazard Analysis (PHA).

During the hazard identification stage, the panel identified potential safety issues, their possible causes and corresponding effects. The Technical Writer documented these discussions in the PHA. Following each portion, the Facilitator obtained concurrence from the Panel Members to ensure all documentation was correct.

The sections below provide an overview of each identified hazard, cause and effect, for the proposed project.

ITO-LTG-1: Pilot Loss of Situational Awareness (LOSA)

(System State: All Stages of Construction)

The SRMP determined that Pilot LOSA is a hazard which could be caused by visual saturation, continuation bias, closed movement areas, altered taxi routes, not reading NOTAMs, expectation bias, non-standard lighting, miscommunication, distraction/task saturation, and insufficient training. This hazard exists in all stages of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-28 NOTAMs for Airport Operators, AC 150/5200-31 Airport Emergency Plan, AC 150/5210-20 Ground Vehicle Operations on Airports, AC 150/5210-24 Airport Foreign Object Debris Management, AC 150/5210-5 Painting, Marking, Lighting of Vehicles Used on Airport, AAC 150/5300-14 Airport Design, AC 150/5340-18 Standards for Airport Sign Systems, AC 150/5345-44 Specifications for Runway and Taxiway Signs, AC 150/5345-46 Specifications for Runway and Taxiway Lighting Fixtures, AC 150/5345-55 Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure, AC 150/5345-56 Specification for L-890, Airport Lighting Control and Monitoring System (ALCMS), AC 150/5370-2 Operational Safety on Airports During Construction, ACAC Checklist Airport Construction Advisory Council, Pilot Training, NOTAM Notice to Airmen, Charts Aeronautical, Jeppesen charts, Daily Briefings/Notes, CSPP Construction Safety and Phasing Plan, and SRMD Assumptions List from SRA Panel Meeting.

The SRMP identified five (5) possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

ITO-LTG-2: Vehicle Driver Loss of Situational Awareness (LOSA)

(System State: All Stages of Construction)

The SRMP determined that Vehicle Driver LOSA is a hazard which could be caused by continuation bias, closed movement areas, altered taxi routes, expectation bias, miscommunication, distraction/task saturation, and insufficient training. This hazard exists in all stages of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-18 Airport Safety Self Inspection, AC 150/5200-28 NOTAMs for Airport Operators, AC 150/5200-31 Airport Emergency Plan, AC 150/5210-20 Ground Vehicle Operations on Airports, AC 150/5210-24 Airport Foreign Object Debris Management, AC 150/5210-5 Painting, Marking, Lighting of Vehicles Used on Airport, AC 150/5340-1 Standards for Airport Markings, AC 150/5340-18 Standards for Airport Sign Systems, AC 150/5345-44 Specifications for Runway and Taxiway Signs, AC 150/5345-53 Airport Lighting Equipment Certification Program, AC 150/5345-55 Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure, Airport

Lighting Control and Monitoring System (ALCMS), AC 150/5370-2 Operational Safety on Airports During Construction, ACAC Checklist Airport Construction Advisory Council, JO 7110.65 Air Traffic Control, JO 7210.3 Facility Operations and Administration, SOP Standard Operating Procedure, LOA Letter of Agreement, ATIS Automated Terminal Information System, Airfield Driver Training, Access Control Training, ATC Scanning, Airfield Operations Monitoring, Radio Frequency Monitoring, NOTAM Notice to Airmen, Charts Aeronautical, Jeppesen charts, Daily Briefings/Notes, CSPP Construction Safety and Phasing Plan, and SRMD Assumptions List from SRA Panel Meeting.

The SRMP identified six (6) possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

ITO-LTG-3: Controller Loss of Situational Awareness (LOSA)

(System State: All Stages of Construction)

The SRMP determined that Controller LOSA is a hazard which could be caused by visual saturation, continuation bias, closed movement areas, altered taxi routes, not reading NOTAMs, expectation bias, non-standard lighting, miscommunication, distraction/task saturation, and insufficient training. This hazard exists in all stages of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-28 NOTAMs for Airport Operators, AC 150/5200-31 Airport Emergency Plan, AC 150/5210-20 Ground Vehicle Operations on Airports, AC 150/5210-24 Airport Foreign Object Debris Management, AC 150/5340-1 Standards for Airport Markings, AC 150/5340-18 Standards for Airport Sign Systems, AC 150/5370-2 Operational Safety on Airports During Construction, FAR Part 139 Regulations/Airport, ACAC Checklist Airport Construction Advisory Council, JO 7110.65 Air Traffic Control, JO 7210.3 Facility Operations and Administration, JO 6000.15 NAS Maintenance, SOP Standard Operating Procedure, LOA Letter of Agreement, MEARTS/STARS Micro En-route Automated Radar Tracking System, ARSR, ASR-9, ASR-11 Surveillance Radar, ATIS Automated Terminal Information System, Pilot Training, Controller Training, Pilot Intervention, Controller Intervention, ATC Scanning, Operational Supervision, Radio Frequency Monitoring, NOTAM Notice to Airmen, Charts Aeronautical, Jeppesen charts, CRM Crew Resource Management, Daily Briefings/Notes, CSPP Construction Safety and Phasing Plan, and SRMD Assumptions List from SRA Panel Meeting.

The SRMP identified two (2) possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

ITO-LTG-4: Runway Excursion on Shortened Runway 26

(System State: Phase 6)

The SRMP determined that a Runway Excursion on Shortened Runway 26 is a hazard which could be caused by shortened Runway 26 and improper pilot briefing/checklist. This hazard exists in

Phase 6 of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-28 NOTAMs for Airport Operators, AC 150/5340-1 Standards for Airport Markings, AC 150/5340-18 Standards for Airport Sign Systems, AC 150/5370-2 Operational Safety on Airports During Construction, ACAC Checklist Airport Construction Advisory Council, JO 7110.65 Air Traffic Control, SOP Standard Operating Procedure, LOA Letter of Agreement, MEARTS/STARS Micro En-route Automated Radar Tracking System, ARSR, ASR-9, ASR-11 Surveillance Radar, ATIS Automated Terminal Information System, Pilot Training, Controller Training, Pilot Intervention, Controller Intervention, ATC Scanning, NOTAM Notice to Airmen, Charts Aeronautical, Jeppesen charts, AFD Airport/Facility Directory, CRM Crew Resource Management, Daily Briefings/Notes, CSPP Construction Safety and Phasing Plan, and SRMD Assumptions List from SRA Panel Meeting.

The SRMP identified two (2) possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system was injury to passengers/personnel. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

Section 7 – Phases 3 & 4: Hazard Analysis and Risks Assessed

To ensure a thorough examination of hazards, the SRMP's methodology for risk analysis was based on the Five-Step SRM process detailed in FAA Order 5200.11.

1. Describe the System
2. Identify Hazards
3. Analyze Risk
4. Assess Level of Risk
5. Mitigation Actions

Risk Analysis

The objective of this step is to determine the initial safety risk associated with the effects of each identified hazard. The safety risk associated with a hazard is the combination of predicted severity and the likelihood of the potential effect of a hazard in the worst credible system state. This is also accomplished in consideration of the existing controls which help to mitigate risks to an acceptable level.

The Effect is defined as the potential outcome or harm of the hazard if it occurs in the defined system state. The SRMP categorized a list of Effects due to each Hazard during the PHL process (Appendix A).

The Preliminary Hazard Assessment (PHA) worksheet was developed to record the hazards, causes, system states, existing controls, possible effects, severity and likelihood rationale, initial risk, mitigation, and predicted residual risk. The completed PHA is found in Appendix B.

Risk Assessment

The objective of this step is to determine the safety risk level acceptability. Risk Assessment is the process of combining the impacts of risk elements discovered in risk analysis and comparing them against some acceptability criteria. Risk Assessment can include consolidating risks into risk sets that can be jointly mitigated, combined, and then used in decision making. Order 5200.11 defines risk as the composite of predicted severity and likelihood of the potential effect of a hazard in the worst credible system state.

Each hazard was evaluated by two factors; first the severity was determined using Table 6, followed by a determination of likelihood using Table 7. The SRM Panel identified the severity and likelihood of each hazard, as described above. These documents were also provided as a complete SRMP Panel Packet, see Appendix C. The severity and likelihood ratings from each panel member can be found in Appendix D.

Severity is the potential consequence or impact of a hazard in terms of degree of loss or harm. It is a prediction of how bad the outcome of a hazard can be. There may be many outcomes associated with a given hazard, and the severity should be determined for each outcome.

Likelihood is the estimated probability or frequency, in quantitative or qualitative terms, of the outcome(s) associated with a hazard. It is an expression of how often an outcome of a hazard is predicted to occur in the future.

The SRMP plotted the severity and likelihood for each hazard's worst credible outcome on the FAA predictive risk matrix (Figure 27). The SRMP then observed where the hazards lie based on the three categories of risk (low, medium, high). This indicates the "initial" risk level for each hazard. If the initial risk for any analyzed hazards falls in the high risk (red) region, FAA Order 5200.1 requires mitigation. It also requires further Safety Assessment Acceptance and signature requirements by the Safety Review Board and ARP-1. The Risk Matrix provides a visual depiction of the safety risk and enables prioritization in the control of the hazards. The Risk Matrix shown in Figure 27 is referenced from FAA Order 8040.4B Safety Risk Management Policy.

Severity Likelihood	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A					
Probable B					
Remote C					
Extremely Remote D		ITO-LTG-1 ITO-LTG-2 ITO-LTG-3 ITO-LTG-4			
Extremely Improbable E					

Figure 1: Risk Matrix

High Risk – Unacceptable
Medium Risk – Acceptable with Mitigation
Low Risk – Acceptable

ITO-LTG-1 Pilot Loss Of Situational Awareness (LOSA)

Effect: Runway Incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway excursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-Minor and the likelihood as D-Extremely Remote as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Minor in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D – Low (Green).

ITO-LTG-2 Vehicle Driver Loss Of Situational Awareness (LOSA)

Effect: Runway Incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway excursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-Minor and the likelihood as D-Extremely Remote as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Minor in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D – Low (Green).

ITO-LTG-3 Controller Loss Of Situational Awareness

Effect: Runway Incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway excursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-Minor and the likelihood as D-Extremely Remote as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Minor in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D – Low (Green).

Effect: Injury to Passengers/Personnel

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as injury to passengers/personnel. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-Minor and the likelihood as D-Extremely Remote as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Minor in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D – Low (Green).

Table 6: Severity Definitions

DRAFT

Hazard Severity Classification

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Airports	No damage to aircraft but minimal injury or discomfort of little consequence to passenger(s) or worker(s)	-Minimal damage to aircraft, or -Minor injury to passengers, or -Minimal unplanned airport operations limitations (i.e. taxiway closure), or -Minor incident involving the use of airport emergency procedures	-Major damage to aircraft and/or minor injury to passenger(s)/worker(s), or -Major unplanned disruption to airport operations, or -Serious incident, or -Deduction on the airport's ability to deal with adverse conditions	-Severe damage to aircraft and/or serious injury to passenger(s)/worker(s); or -Complete unplanned airport closure, or -Major unplanned operations limitations (i.e., runway closure), or -Major airport damage to equipment and facilities	-Complete loss of aircraft and/or facilities or fatal injury in passenger(s)/worker(s); or -Complete unplanned airport closure and destruction of critical facilities; or -Airport facilities and equipment destroyed
ATC Services	A minimal reduction in ATC services CAT D runway incursion ¹ Proximity Event, Operational Deviation, or measure of compliance greater than or equal to 66 percent ²	Low Risk Analysis Event severity, ³ two or fewer indicators fail CAT C runway incursion	Medium Risk Analysis Event severity, three indicators fail CAT B runway incursion	High Risk Analysis Event severity, four indicators fail CAT A runway incursion	Ground collision ⁵ Mid-air collision Controlled flight into terrain or obstacles
Flying Public	Minimal injury or discomfort to persons on board	Physical discomfort to passenger(s) (e.g., extreme braking action, clear air turbulence causing unexpected movement of aircraft resulting in injuries to one or two passengers out of their seats) Minor injury to less than or equal to 10 percent of person on board ⁶	Physical distress to passengers (e.g., abrupt evasive action, severe turbulence causing unexpected aircraft movements) Minor injury to greater than 10 percent of persons on board	Serious injury to persons onboard ⁷	Fatal injuries to persons onboard ⁸
Flight Crew	Pilot is aware of traffic (identified by Traffic Collision Avoidance System traffic alert, issued by ATC, or observed by flight crew) in close enough proximity to require focused attention, but no action is required Pilot deviation ⁹ where loss of airborne separation falls within the same parameters of a Proximity Event or measure of compliance greater than or equal to 66 percent Circumstances requiring a flight crew to initiate a go-around	Pilot deviation where loss of airborne separation falls within the same parameters of a low Risk Analysis Event severity Reduction of functional capability of aircraft, but overall safety not affected (e.g., normal procedures as per Airplane Flight Manuals) Circumstances requiring a flight crew to abort takeoff (rejected takeoff); however, the act of aborting takeoff does not degrade the aircraft performance capability Near mid-air collision encounters with separation greater than 500 feet ¹⁰	Pilot deviation where loss of airborne separation falls within the same parameters of a medium Risk Analysis Event severity Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per Airplane Flight Manuals Circumstances requiring a flight crew to reject landing (i.e., balked landing) at or near the runway threshold Circumstances requiring a flight crew to abort takeoff (i.e., rejected takeoff); the act of aborting takeoff degrades the aircraft performance capability Near mid-air collision encounters with separation less than 500 feet ¹⁰	Pilot deviation where loss of airborne separation falls within the same parameters of a high Risk Analysis Event severity Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per Airplane Flight Manuals Near mid-air collision encounters with separation less than 100 feet ¹⁰	Ground collision Mid-air collision Controlled flight into terrain or obstacles Hull loss to manned aircraft Failure conditions that would prevent continued safe flight and landing

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Unmanned Aircraft Systems	Discomfort to those on the ground Loss of separation leading to a measure of compliance greater than or equal to 66 percent	Low Risk Analysis Event severity, two or fewer indicators fail Non-serious injury to three or fewer people on the ground	Medium Risk Analysis Event severity, three indicators fail Non-serious injury to more than three people on the ground A reduced ability of the crew to cope with adverse operating conditions to the extent that there would be a significant reduction in safety margins Manned aircraft making an evasive maneuver, but proximity from unmanned aircraft remains greater than 500 feet	High Risk Analysis Event severity, four indicators fail Incapacitation to unmanned aircraft system crew Proximity of less than 500 feet to a manned aircraft Serious injury to persons other than the unmanned aircraft System crew	A collision with a manned aircraft Fatality or fatal injury to persons other than the unmanned aircraft system crew

Table 7: Likelihood Definitions

	Airport Specific	Quantitative (ATC/Flight Procedures/Systems Engineering)	Domain-wide: NAS-wide, Terminal, or En route
A Frequent	Expected to occur more than once per week or every 2500 departures, whichever occurs sooner	(Probability) ≥ 1 per 1000	Equal to or more than once per week
B Probable	Expected to occur about once every month or 250,000 departures, whichever occurs sooner	$1 \text{ per } 1000 > (\text{Probability}) \geq 1 \text{ per } 100,000$	Less than once per week and equal to more than once per three months
C Remote	Expected to occur about once every year or 2.5 million departures, whichever occurs sooner	$1 \text{ per } 100,000 > (\text{Probability}) \geq 1 \text{ per } 10,000,000$	Less than once per three months and equal to more than once per three years
D Extremely Remote	Expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner	$1 \text{ per } 10,000,000 > (\text{Probability}) \geq 1 \text{ per } 1,000,000,000$	Less than once per three years and equal to or more than once per 30 years.
E Extremely Improbable	Expected to occur less than every 100 years	$1 \text{ per } 1,000,000,000 > (\text{Probability}) \geq 1 \text{ per } 10^{14}$	Less than once per 30 years

Note: A cutoff point of 10^{-14} was established to define the boundaries of credible events for the purpose of calculating likelihood.

During the SRMP PHA, there were instances that SRMP members were outside of the majority vote for either severity and likelihood while assessing for initial risks, which were recorded and shown below in Tables 8 and 9 and Appendix D – Dissenting Opinions. Those SRMP members with the indicated yellow highlights under each Hazard ID, were afforded an opportunity to provide their dissenting opinions in writing as required by FAA Office of airports Safety Management System (SMS) Implementation Guidance and Desk Reference, Section 5.3.e.2, SRMD documentation; however, there were no dissenting opinions provided by any of the Panel Members.

Table 8: Initial Risk Dissenting Opinion Summary (1 of 2)

	ITO-LTG-1 Pilot LOSA		ITO-LTG-2 Vehicle Driver LOSA	
Panel Member	Severity	Likelihood	Severity	Likelihood
Steve Santiago	3	D	4	C
Vincent Domen	4	C	4	D
Kandyce Watanabe	4	D	4	D
Neil Okuna	4	D	4	D
Joe Santoro	4	C	4	D
George Hodgson	4	D	4	D
Perfecto Delmendo	4	D	4	C
Majority Rating	4	D	4	D
	4D – Low		4D – Low	

Table 9: Initial Risk Dissenting Opinion Summary (2 of 2)

	ITO-LTG-3 Controller LOSA		ITO-LTG-4 Runway Excursion on Shortened RWY 26	
Panel Member	Severity	Likelihood	Severity	Likelihood
Steve Santiago	4	D	4	D
Vincent Domen	4	D	4	D
Kandyce Watanabe	4	D	4	D
Neil Okuna	4	D	4	E
Joe Santoro	4	C	5	C
George Hodgson	4	D	4	D
Perfecto Delmendo	4	D	4	C
Majority Rating	4	D	4	D
	4D – Low		4D – Low	

Section 8 – Phase 5: Treatment of Risk / Mitigation of Hazards

The SRMP agreed that the following Hazards and associated Effects which were rated with Low Initial Risk 4D, had existing controls in place to effectively manage these risks and no mitigation measures were needed.

- ❖ ITO-LTG-1, Pilot LOSA.
- ❖ ITO-LTG-2, Vehicle Driver LOSA.
- ❖ ITO-LTG-3, Controller LOSA.
- ❖ ITO-LTG-4, Runway Excursion on Shortened Runway 26.

Section 9 – Tracking and Monitoring Hazards

Referencing the SRMP SMS Desk Reference, low risk hazards (green) do not need to be actively managed but must be recorded in the SRMD. Medium risk is acceptable within the ARP SMS. A medium risk is the minimum acceptable safety objective. With medium risk, the proposal may be carried out as long as the risk is tracked and managed.

These hazards will be monitored by HDOT-A as they move through the design and construction SRA phases and addressed as needed.

The SRMP incorporated safety performance targets for triggering a reconvened panel. The panel will reconvene to look at additional mitigation if there is one incident falling within the category of 5-Minimal for the duration of the Taxiway and Runway Light Replacement at Hilo International Airport project. The definitions are described below:

- ATC Services
 - Conditions resulting in a slight reduction in ATC services
 - A loss of separation resulting in a Category C, RI, or Operation Error (OE)
- Flight Crew
 - Potential for PD due to TCAS Preventative Resolution Advisory (PRA) advising crew not to deviate from present vertical profile
 - PD where loss of airborne separation falls within the same parameters of a Category C, OE
 - A reduction of functional capability of aircraft but does not impact overall safety (e.g., normal procedures per ARM)
- Flying Public
 - Physical discomfort to passenger(s) (e.g., extreme braking action, clear air turbulence causing unexpected movement of aircraft causing injuries to one or two passengers out of their seats)
 - Minor injury to greater than zero or less than equal to 10% of passengers
- Airport
 - Minimal damage to aircraft
 - Minor injury to passengers
 - Minimal unplanned airport operations limitations (e.g., taxiway closure)
 - Minor incident involving the use of airport emergency procedures

This would effectively cover all incidents associated with all stakeholder groups.

Appendix A

ITO Taxiway and Runway Lighting Replacement Safety Risk Assessment (SRA) Panel

Preliminary Hazard List

Categorization:

[H] = **Hazard**– any real or potential condition that can result in injury, illness, or death to people; damage to or loss of a system, equipment or property; or damage to the environment.

[C] = **Cause**– events occurring independently or in combination that result in a hazard or failure.

[E] = **Effect**– real or potential outcome or harm that could be created if the hazard occurs in the defined system state

1. NO: runway excursion on RWY 26 when shortened. [H/E]
2. NO: attempted landing on RWY 3 or 21 when closed. [H/E]
3. JS: Runway Incursion [E]
4. JS: Surface Incident [E]
5. ~~JS: Jet blast toward workers during temporary taxi routes~~
6. GH: Flight Crew confusion [H] when landing on shortened 26 with discrepancy between lighting, signage and markings. [E/H]
7. PD: LOSA by pilot [H] due to continuation bias.
8. KW: driver/vehicle LOSA. [H]
9. VD: lack of communication with tower (notification via phone call specifically to the cab, as office is unoccupied at 5:45am of any unanticipated work overrun of any movement area). [H]
10. JS: Controller LoSA due to changed/changing closures and routes. [H]
11. GH: Spacing on arrival to allow for back taxi from approach control. [H]
12. NO: runway incursion by workers/equipment. [E/H] same as item 8

Preliminary Hazard Analysis (PHA) Worksheet

(1) Hazard ID	(2) Hazard Description	(3) Cause(s)	(4) System State(s)	(5) Existing Controls	(6) Justification / Supporting Data	(7) Effects	(8) Severity	(9) Severity Rationale	(10) Likelihood	(11) Likelihood Rationale	(12) Initial Risk	(13) Mitigation	(14) Mitigation Responsibility	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Prerequisite for accident or incident	Events that result in a hazard or failure	Conditions, characterized by quantities or qualities, in which a system can exist	Mitigations that exist to prevent or reduce hazard occurrence or mitigate its effect	Explanation and additional detailing of Existing Controls (Need to cite specific paragraph and/or section number of FAA Orders, Program Guidance Letters, Advisory Circulars, Federal Aviation Regulations used)	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Resultant matrix determination	Particular effect of the identified hazard producing the worst credible outcome (likelihood is not considered)	Resultant matrix determination	Expression of how often a particular effect is expected to occur given existing controls and requirements (severity must be considered first)	Risk matrix ranking based on severity and likelihood of a hazard when it is first identified and assessed	Stated proposed mitigation for this hazard	Who has the responsibility to implement the mitigation	Risk status predicted to occur when recommended controls or requirements are verified
ITO-LTG-1	Pilot Loss of Situational Awareness (LOSA)	-visual saturation -continuation bias -closed movement areas -altered taxi routes -not reading NOTAMs -expectation bias -non-standard lighting -miscommunication -distraction/task saturation	All phases of construction	-AC 150/5200-28: NOTAMs for Airport Operators -AC 150/5200-31: Airport Emergency Plan -AC 150/5210-20: Ground Vehicle Operations on Airports -AC 150/5210-24: Airport Foreign Object Debris Management -AC 150/5210-5: Painting, Marking, Lighting of Vehicles Used on Airport -AC 150/5300-13: Airport Design -AC 150/5340-18: Standards for Airport Sign Systems -AC 150/5345-44: Specifications for Runway and Taxiway Signs -AC 150/5345-46: Specifications for Runway and Taxiway Lighting Fixtures -AC 150/5345-55: Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure -AC 150/5345-56: Specification for L-890, Airport Lighting Control and Monitoring System (ALCMS) -AC 150/5370-2: Operational Safety on Airports During Construction -ACAC Checklist: Airport Construction Advisory Council -Pilot Training -NOTAM: Notice to Airmen -Charts: Aeronautical, Jeppesen charts -Daily Briefings/Notes -CSPP: Construction Safety and Phasing Plan -SRMD: Safety Risk Management Document Assumptions list	-AC 150/5200-28D: Sections 1.6.1, 8, 10, 13a, 18 -AC 150/5210-24: Section 4.1b, 4.3.a.1, 4.3a.5, 6.2 -AC 150/5210-5D: Sections 4c, 5a -AC 150/5300-13A: Sections 304, 401 -AC 150/5340-18F: Chapters 1 and 2 -AC 150/5370-2G: Sections 1.2, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.13, 2.4.1.9.b, 2.18.3.2, 2.20	-runway incursion -aircraft damage -surface incident -runway excursion -landing on closed runway (3-21)	4-minor	subject matter expertise	D-extremely remote	subject matter expertise	4D-Low	N/A	N/A	N/A
ITO-LTG-2	Vehicle Driver LOSA	-continuation bias -closed movement areas -altered taxi routes -expectation bias -miscommunication -distraction/task saturation -insufficient training	All phases of construction	-AC 150/5200-18: Airport Safety Self Inspection -AC 150/5200-28: NOTAMs for Airport Operators -AC 150/5200-31: Airport Emergency Plan -AC 150/5210-20: Ground Vehicle Operations on Airports -AC 150/5210-24: Airport Foreign Object Debris Management -AC 150/5210-5: Painting, Marking, Lighting of Vehicles Used on Airport -AC 150/5340-1: Standards for Airport Markings -AC 150/5340-18: Standards for Airport Sign Systems -AC 150/5345-44: Specifications for Runway and Taxiway Signs -AC 150/5345-53: Airport Lighting Equipment Certification Program -AC 150/5345-55: Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure -AC 150/5370-2: Operational Safety on Airports During Construction -ACAC Checklist: Airport Construction Advisory Council -JO 7110.65: Air Traffic Control -JO 7210.3: Facility Operations and Administration -SOP: Standard Operating Procedure -LOA: Letter of Agreement -ATIS: Automated Terminal Information System -Airfield Driver Training, Access Control Training -ATC Scanning, Airfield Operations Monitoring, Radio Frequency Monitoring -NOTAM: Notice to Airmen -Charts: Aeronautical, Jeppesen charts -Daily Briefings/Notes -CSPP: Construction Safety and Phasing Plan -SRMD: Safety Risk Management Document Assumptions list	-AC 150/5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 -AC 150/5200-28D: Sections 1.6.1, 8, 10, 13a, 18 -AC 150/5210-20A: Sections 1.1, 1.3, 2.1, 2.2, 3.1.3, 3.4, 3.1.4.2, 3.4, 3.5 -AC 150/5210-24: Section 2.2.b.1, 3.2, 4.1b, 4.3.a.1, 4.3a.5, 6.2 -AC 150/5210-5D: Sections 4c, 5a -AC 150/5300-13A: Sections 304, 401 -AC 150/5340-1F: Chapters 2, 3, & 4 -AC 150/5340-18F: Chapters 1 and 2 -AC 150/5370-2G: Sections 1.4.2.10, 1.4.3.6, 2.13, 2.4.1.9.b, 2.4.2.14, 2.18.3.2, 2.20, 2.9.2, 2.9.2.7, 2.9.2.2, 2.9.2.9 -JO 7110.65X: 2-4-3, 3-6-2-a, 3-6-3-a, 3-7-2-a,h-2 -JO 7210.3AA: 4-3-1	-spillover from work areas -VPD -runway incursion -surface incident -injury from jet blast -taxiway incursion	4-minor	subject matter expertise	D-extremely remote	subject matter expertise	4D-Low	N/A	N/A	N/A

Preliminary Hazard Analysis (PHA) Worksheet

(1) Hazard ID	(2) Hazard Description	(3) Cause(s)	(4) System State(s)	(5) Existing Controls	(6) Justification / Supporting Data	(7) Effects	(8) Severity	(9) Severity Rationale	(10) Likelihood	(11) Likelihood Rationale	(12) Initial Risk	(13) Mitigation	(14) Mitigation Responsibility	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Prerequisite for accident or incident	Events that result in a hazard or failure	Conditions, characterized by quantities or qualities, in which a system can exist	Mitigations that exist to prevent or reduce hazard occurrence or mitigate its effect	Explanation and additional detailing of Existing Controls (Need to cite specific paragraph and/or section number of FAA Orders, Program Guidance Letters, Advisory Circulars, Federal Aviation Regulations used)	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Resultant matrix determination	Particular effect of the identified hazard producing the worst credible outcome (likelihood is not considered)	Resultant matrix determination	Expression of how often a particular effect is expected to occur given existing controls and requirements (severity must be considered first)	Risk matrix ranking based on severity and likelihood of a hazard when it is first identified and assessed	Stated proposed mitigation for this hazard	Who has the responsibility to implement the mitigation	Risk status predicted to occur when recommended controls or requirements are verified
ITO-LTG-3	Controller LOSA	-visual saturation -continuation bias -closed movement areas -altered taxi routes -not reading NOTAMs -expectation bias -non-standard lighting -miscommunication -distraction/task saturation -insufficient training	All phases of construction	-AC 150/5200-28: NOTAMs for Airport Operators -AC 150/5200-31: Airport Emergency Plan -AC 150/5210-20: Ground Vehicle Operations on Airports -AC 150/5210-24: Airport Foreign Object Debris Management -AC 150/5300-13: Airport Design -AC 150/5340-1: Standards for Airport Markings -AC 150/5340-18: Standards for Airport Sign Systems -AC 150/5370-2: Operational Safety on Airports During Construction -FAR Part 139 Regulations -ACAC Checklist: Airport Construction Advisory Council -JO 7110.65: Air Traffic Control -JO 7210.3: Facility Operations and Administration -JO 6000.15: NAS Maintenance -SOP: Standard Operating Procedure -LOA: Letter of Agreement -MEARTS/STARS: Micro Enroute Automated Radar System -ARSR, ASR-9, ASR-11: Surveillance Radar -ATIS: Automated Terminal Information System -Pilot Training, Controller Training -Pilot Intervention, Controller Intervention, ATC Scanning, Operational Supervision, Radio Frequency Monitoring -NOTAM: Notice to Airmen -Charts: Aeronautical, Jeppesen charts -CRM: Crew Resource Management -Daily Briefings/Notes -CSPP: Construction Safety and Phasing Plan -SRMD: Safety Risk Management Document Assumptions list	-AC 150/5200-28D: Sections 1.6.1, 8, 10, 13a -AC 150/5210-20A: Sections 1.1, 1.3, 2.1, 2.2, 3.1.3, 3.4, 3.1.4.2, 3.4, 3.5 -AC 150/5370-2G: Sections 1.2, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.4.2.10, 2.1, 2.22.9.2.9, 2.13, 2.4.1.9.b, 2.4.1.14, 2.18.3.2, 2.20 -FAR Part 139: Sections 327, para a-b; 329, para a-e; 339; 341, para a-b -JO7110.65X: 2-4-3, 2-9-2-d, 2-9-3-g,h, 3-3-3-a, 3-6-2-a, 3-6-3-a, 3-7-2-a, b, h-2 -JO7210.3AA: 10-3-11 b, c, d, e, and f; 10-3-12 b-2 and 3, c; 10-4-1 a and d	-runway incursion -surface incident	4-minor	subject matter expertise	D-extremely remote	subject matter expertise	4D-Low	N/A	N/A	N/A
ITO-LTG-4	Runway Excursion on shortened Runway 26	-shortened runway 26 -improper pilot briefing/checklist	Phase 6	-AC 150/5200-28: NOTAMs for Airport Operators AC 150/5340-1: Standards for Airport Markings -AC 150/5340-18: Standards for Airport Sign Systems -AC 150/5370-2: Operational Safety on Airports During Construction -FAR Part 139 Regulations -ACAC Checklist: Airport Construction Advisory Council -JO 7110.65: Air Traffic Control -SOP: Standard Operating Procedure -MEARTS/STARS: Micro Enroute Automated Radar System -ARSR, ASR-9, ASR-11: Surveillance Radar -ATIS: Automated Terminal Information System -Pilot Training, Controller Training -Pilot Intervention, Controller Intervention, ATC Scanning, Operational Supervision -NOTAM: Notice to Airmen -Charts: Aeronautical, Jeppesen charts -AFD: Airport/Facility Directory -CRM: Crew Resource Management -Daily Briefings/Notes -CSPP: Construction Safety and Phasing Plan -SRMD: Safety Risk Management Document Assumptions list	-AC 150/5200-28D: Sections 1.6.1, 8, 10, 13a, 18 -AC 150/5340-1M: Chapters 2, 3, and 4 -AC 150/5340-18F: Chapters 1 and 2 -AC 150/5370-2G: Sections 1.2, 1.2.1, 1.2.2, 1.2.3, 1.2.4, 2.13, 2.4.1.9.b, 2.4.1.14, 2.18.3.2, 2. 3-3-3-a, 3-6-2-a, 3-6-3-s, 3-7-2-a, b, h-220 -FAR Part 139 Regulations: Sections 327, para a-b; 329, para a-e; 339; 341, para a-b -JO 6110.65X: 2-4-3, 2-9-3-g, h	-aircraft damage -injury to passengers/personnel	4-minor	subject matter expertise	D-extremely remote	subject matter expertise	4D-Low	N/A	N/A	N/A
ITO-LTG-5	Attempted landing on Runway 3 or 21 when closed	TO BE REMOVED; CAPTURED IN PILOT LOSA												
ITO-LTG-6	Pilot Crew confusion when landing on shortened Runway 26 with discrepancy between lighting, signage and markings	TO BE REMOVED; CAPTURED ABOVE												
ITO-LTG-7	Lack of communication with tower of any unanticipated work overrun of any movement area	TO BE REMOVED; VERBAL TOWER NOTIFICATION ADDED TO ASSUMPTION LIST AS #28												
ITO-LTG-8	Spacing on arrival to allow for backtaxi from approach control	TO BE REMOVED; WHEN TOWER CLOSED, ITO BECOMES CLASS D AIRPORT (ONE IN/ONE OUT)												
ITO-LTG-9	Runway incursion by workers/equipment	TO BE REMOVED; CAPTURED IN VEHICLE DRIVER LOSA												

Safety Risk Assessment (SRA) Panel

Handouts

Appendix C

Existing Controls List

#	CONTROL	TITLE/DESCRIPTION
Advisory Circulars		
1	AC 150/5070 – 7	Airport System Planning Process
2	AC 150/5200 – 18	Airport Safety Self Inspection
3	AC 150/5200 – 28	NOTAMs for Airport Operators
4	AC 150/5200 – 31	Airport Emergency Plan
5	AC 150/5210 – 20	Ground Vehicle Operations on Airports
6	AC 150/5210 – 24	Airport Foreign Object Debris Management
7	AC 150/5210 – 5	Painting, Marking, Lighting of Vehicles Used on Airport
8	AC 150/5300 – 13	Airport Design
9	AC 150/5340 – 1	Standards for Airport Markings
10	AC 150/5340 – 18	Standards for Airport Sign Systems
11	AC 150/5340 – 30	Design and Installation Details for Airport Visual Aids
12	AC 150/5345 – 44	Specifications for Runway and Taxiway Signs
13	AC 150/5345 – 46	Specifications for Runway and Taxiway Lighting Fixtures
14	AC 150/5345 – 53	Airport Lighting Equipment Certification Program
15	AC 150/5345 – 55	Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure
16	AC 150/5345 – 56	Specification for L-890, Airport Lighting Control and Monitoring System (ALCMS)
17	AC 150/5370 – 2	Operational Safety on Airports During Construction
18	FAR Part 139	Regulations/Airport
Directives - ATC		
19	ACAC Checklist	Airport Construction Advisory Council
20	JO 7110.65	Air Traffic Control
21	JO 7400.2	Handling Airspace Matters Procedures
22	JO 7210.3	Facility Operations and Administration
23	JO 6000.15	NAS Maintenance
24	SOP	Standard Operating Procedure
25	LOA	Letter of Agreement
Systems		
26	ARTS/STARS	Automated Radar System
27	ARSR, ASR-9, ASR-11	Surveillance Radar
28	ASDE, ASDE-X	Airport Surface Detection Equipment
29	ATIS	Automated Terminal Information System
30	TCAS	Traffic Alert & Collision Avoidance System
31	CA/MSAW	Conflict Alert/Minimum Safe Altitude Warning
32	AMASS	Airport Movement Area Safety System
33	ASOS	Automated Surface Observing System

Appendix C

Existing Controls List

#	CONTROL	TITLE/DESCRIPTION
Training		
34	Pilot Training	--
35	Controller Training	--
36	Airfield Driver Training	--
37	Access Control Training	--
Intervention		
38	Pilot Intervention	--
39	Controller Intervention	--
40	ATC Scanning	--
41	Airfield Operations Monitoring	--
42	Operational Supervision	--
43	Radio Frequency Monitoring	--
Publications		
44	NOTAM	Notice to Airmen
45	Charts	Aeronautical, Jeppesen charts
46	AFD	Airport/Facility Directory
47	AIM	Aeronautical Information Manual
Other		
48	CRM	Crew Resource Management
49	Daily Briefings/Notes	--
50	TMI	Traffic Management Initiative
51	CSPP	Construction Safety and Phasing Plan
52		
53		
54		
55		

Appendix C

Preliminary Hazard List with Risk Level

Source: FAA Office of Airports Safety Management Systems (SMS) Desk Reference

Hazard	Initial Risk
Foreign Object Damage / Debris (FOD)	3D
Loss of Situational Awareness by the Pilot: Change in Airport Geometry	2D
Loss of Situational Awareness by the Pilot: Continuation Bias / Complacency	2D
Loss of Situational Awareness by the Pilot: Construction Light Pollution	2E
Loss of Situational Awareness by the Pilot: Visual Cue Saturation	2D
Loss of Situational Awareness by the Pilot: Complex Taxiing Instructions	2D
Loss of Situational Awareness by the Pilot: Insufficient/Ineffective/Inaccurate Notification to Users/Stakeholders	2D
Loss of Situational Awareness by the Pilot: Interference or Loss of NAS Systems	3D
Loss of Situational Awareness by the Controllers: Complexity	3D
Loss of Situational Awareness by the Controllers: Interference or Loss of NAS Systems	4C
Loss of Situational Awareness by the Controllers: Line of Sight	5D
Loss of Situational Awareness by Vehicle Operators/Personnel: Visual Cue Saturation	3D
Increase/Changes in Wildlife Activity	4D
Penetration of Protected Surfaces (Airport Design, TERPS, and others)	5C

Appendix C. Safety Assessment Tables**Hazard Severity Classification**

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Airports	No damage to aircraft but minimal injury or discomfort of little consequence to passenger(s) or worker(s)	-Minimal damage to aircraft, or -Minor injury to passengers, or -Minimal unplanned airport operations limitations (i.e. taxiway closure), or -Minor incident involving the use of airport emergency procedures	-Major damage to aircraft and/or minor injury to passenger(s)/worker(s), or -Major unplanned disruption to airport operations, or -Serious incident, or -Deduction on the airport's ability to deal with adverse conditions	-Severe damage to aircraft and/or serious injury to passenger(s)/worker(s); or -Complete unplanned airport closure, or -Major unplanned operations limitations (i.e., runway closure), or -Major airport damage to equipment and facilities	-Complete loss of aircraft and/or facilities or fatal injury in passenger(s)/worker(s); or -Complete unplanned airport closure and destruction of critical facilities; or -Airport facilities and equipment destroyed
ATC Services	A minimal reduction in ATC services CAT D runway incursion ¹ Proximity Event, Operational Deviation, or measure of compliance greater than or equal to 66 percent ²	Low Risk Analysis Event severity, ³ two or fewer indicators fail CAT C runway incursion	Medium Risk Analysis Event severity, three indicators fail CAT B runway incursion	High Risk Analysis Event severity, four indicators fail CAT A runway incursion	Ground collision ⁵ Mid-air collision Controlled flight into terrain or obstacles
Flying Public	Minimal injury or discomfort to persons on board	Physical discomfort to passenger(s) (e.g., extreme braking action, clear air turbulence causing unexpected movement of aircraft resulting in injuries to one or two passengers out of their seats) Minor injury to less than or equal to 10 percent of person on board ⁶	Physical distress to passengers (e.g., abrupt evasive action, severe turbulence causing unexpected aircraft movements) Minor injury to greater than 10 percent of persons on board	Serious injury to persons onboard ⁷	Fatal injuries to persons onboard ⁸
Flight Crew	Pilot is aware of traffic (identified by Traffic Collision Avoidance System traffic alert, issued by ATC, or observed by flight crew) in close enough proximity to require focused attention, but no action is required Pilot deviation ⁹ where loss of airborne separation falls within the same parameters of a Proximity Event or measure of compliance	Pilot deviation where loss of airborne separation falls within the same parameters of a low Risk Analysis Event severity Reduction of functional capability of aircraft, but overall safety not affected (e.g., normal procedures as per Airplane Flight Manuals) Circumstances requiring a flight crew to abort takeoff (rejected takeoff); however, the	Pilot deviation where loss of airborne separation falls within the same parameters of a medium Risk Analysis Event severity Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per Airplane Flight Manuals Circumstances requiring a flight crew to reject landing (i.e., balked	Pilot deviation where loss of airborne separation falls within the same parameters of a high Risk Analysis Event severity Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per Airplane Flight Manuals Near mid-air collision encounters with	Ground collision Mid-air collision Controlled flight into terrain or obstacles Hull loss to manned aircraft Failure conditions that would prevent continued safe flight and landing

Appendix C

7/20/2021

5200.11A
Appendix C

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
	greater than or equal to 66 percent Circumstances requiring a flight crew to initiate a go-around	act of aborting takeoff does not degrade the aircraft performance capability Near mid-air collision encounters with separation greater than 500 feet ¹⁰	landing) at or near the runway threshold Circumstances requiring a flight crew to abort takeoff (i.e., rejected takeoff); the act of aborting takeoff degrades the aircraft performance capability Near mid-air collision encounters with separation less than 500 feet ¹⁰	separation less than 100 feet ¹⁰	
Unmanned Aircraft Systems	Discomfort to those on the ground Loss of separation leading to a measure of compliance greater than or equal to 66 percent	Low Risk Analysis Event severity, two or fewer indicators fail Non-serious injury to three or fewer people on the ground	Medium Risk Analysis Event severity, three indicators fail Non-serious injury to more than three people on the ground A reduced ability of the crew to cope with adverse operating conditions to the extent that there would be a significant reduction in safety margins Manned aircraft making an evasive maneuver, but proximity from unmanned aircraft remains greater than 500 feet	High Risk Analysis Event severity, four indicators fail Incapacitation to unmanned aircraft system crew Proximity of less than 500 feet to a manned aircraft Serious injury to persons other than the unmanned aircraft System crew	A collision with a manned aircraft Fatality or fatal injury to persons other than the unmanned aircraft system crew

Notes:

1. Refer to the current version of FAA Order 7050.1, *Runway Safety Program*.
2. Proximity Events and Operational Deviations are no longer used to measure losses of separation, but they are applicable when validating old data. The minimal loss of standard separation is now represented as a measure of compliance of greater than or equal to 66 percent.
3. Risk Analysis Event severity indicators are as follows:
 - a. **Proximity.** Failure transition point of 50 percent of required separation or less.
 - b. **Rate of Closure.** Failure transition point greater than 205 knots or 2,000 feet per minute (consider both aspects and utilize the higher of the two if only one lies above the transition point).
 - c. **ATC Mitigation.** ATC able to implement separation actions in a timely manner
 - d. **Pilot Mitigation.** Pilot executed ATC mitigation in a timely manner.
4. An effect categorized as catastrophic is one that results in a fatality or fatal injury.
5. **Ground Collision.** An airplane on the ground collides with an object or person.
6. **Minor Injury.** Any injury that is neither fatal nor serious.
7. **Serious Injury.** Any injury that:
 - a. Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received;
 - b. Results in a fracture of any bone (except simple fractures of fingers, toes, or nose);
 - c. Causes severe hemorrhages, nerve, muscle, or tendon damage;
 - d. Involves any internal organ; or
 - e. Involves second- or third-degree burns, or any burns affecting more than five percent of the body's surface.

8. Fatal Injury. Any injury that results in death within 30 days of the accident.
9. Refer to FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, for more information about pilot deviations.
10. Near mid-air collision definitions are derived from FAA Order 8900.1, *Flight Standards Information Management System*, Volume 7, which defines the following categories: critical, potential, and low potential. Refer to Section 9 for the complete definitions of these categories.

Likelihood Definitions

	Airport Specific	Quantitative (ATC/Flight Procedures/Systems Engineering)	Domain-wide: NAS-wide, Terminal, or En route
A Frequent	Expected to occur more than once per week or every 2500 departures, whichever occurs sooner	(Probability) ≥ 1 per 1000	Equal to or more than once per week
B Probable	Expected to occur about once every month or 250,000 departures, whichever occurs sooner	$1 \text{ per } 1000 > (\text{Probability}) \geq 1 \text{ per } 100,000$	Less than once per week and equal to more than once per three months
C Remote	Expected to occur about once every year or 2.5 million departures, whichever occurs sooner	$1 \text{ per } 100,000 > (\text{Probability}) \geq 1 \text{ per } 10,000,000$	Less than once per three months and equal to more than once per three years
D Extremely Remote	Expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner	$1 \text{ per } 10,000,000 > (\text{Probability}) \geq 1 \text{ per } 1,000,000,000$	Less than once per three years and equal to or more than once per 30 years.
E Extremely Improbable	Expected to occur less than every 100 years	$1 \text{ per } 1,000,000,000 > (\text{Probability}) \geq 1 \text{ per } 10^{14}$	Less than once per 30 years

Note: A cutoff point of 10^{-14} was established to define the boundaries of credible events for the purpose of calculating likelihood.

Severity and Likelihood Ratings

HAZARD ID	ITO-LTG-1		ITO-LTG-2		ITO-LTG-3		ITO-LTG-4	
HAZARD - EFFECT	Pilot LOSA - RI		Vehicle Driver LOSA - RI		Controller LOSA - RI		RWY Excursion - injury to pax/personnel	
Panel Member	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood
Steve Santiago (ITO)	3	D	4	C	4	D	4	D
Vincent Domen (ITO ATCT)	4	C	4	D	4	D	4	D
Kandyce Watanabe (HNL ADO)	4	D	4	D	4	D	4	D
Neil Okuna (HCF ATO)	4	D	4	D	4	D	4	E
Joe Santoro (FAA AWP RSO)	4	C	4	D	4	C	5	C
George Hodgson (Southwest)	4	D	4	D	4	D	4	D
Perfecto Delmendo (AvAirPros)	4	D	4	C	4	D	4	C
Majority Rating	4	D	4	D	4	D	4	D
	LOW		LOW		LOW		LOW	

HAZARD ID	ITO-LTG-5		ITO-LTG-6		ITO-LTG-7		ITO-LTG-8		ITO-LTG-9	
Panel Member	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood
Steve Santiago (ITO)	NOT ASSESSED		NOT ASSESSED		NOT ASSESSED		NOT ASSESSED		NOT ASSESSED	
Vincent Domen (ITO ATCT)										
Kandyce Watanabe (HNL ADO)										
Neil Okuna (HCF ATO)										
Joe Santoro (FAA AWP RSO)										
George Hodgson (Southwest)										
Perfecto Delmendo (AvAirPros)										
Majority Rating										

Appendix E

ITO Taxiway and Runway Lighting Replacement Safety Risk Assessment (SRA) Panel

ATTENDANCE

	Name	Panel Member / SME	Company / Agency	Responses as of 3/29
<input checked="" type="checkbox"/>	Santiago, Steven	Panel Member	HDOT-A ITO	None
<input type="checkbox"/>	Smith, Tiffinie	SME	HDOT-A ITO	None
<input type="checkbox"/>	Doll, Joylyne	SME	HDOT-A ITO	Accepted
<input type="checkbox"/>	Shimizu, Calvin	SME	HDOT-A ITO	Accepted
<input type="checkbox"/>	Molina, Mike	SME	HDOT-A ITO	None
<input type="checkbox"/>	Nakayama, Jason	SME	HDOT-A ITO	None
<input type="checkbox"/>	Nagao, Denis	SME	HDOT-A ITO ARFF	None
<input type="checkbox"/>	Jacobs, Martinez	SME	HDOT-A	Accepted
<input type="checkbox"/>	Sakamoto, Tanya	SME	HDOT-A	None
<input checked="" type="checkbox"/>	Tolentino, Adam	SME	HDOT-A AIR-EC	None
<input checked="" type="checkbox"/>	Yamamoto, Brant	SME	HDOT-A AIR-EC	Accepted
<input checked="" type="checkbox"/>	Rivera, Chris	SME	Jacobs	None
<input checked="" type="checkbox"/>	Southwick, Mike	SME	Jacobs	Accepted
<input checked="" type="checkbox"/>	Chauncey, Dakota	SME	Jacobs	Accepted
<input checked="" type="checkbox"/>	Domen, Vincent	Panel Member	FAA ITO ATCT	Accepted
<input checked="" type="checkbox"/>	Moore, Elizabeth	SME	FAA ITO ATCT	None
<input type="checkbox"/>	Ellorda, Renee	SME	FAA ITO & KOA SSC	None
<input type="checkbox"/>	Barclay, Charles	Panel Member	FAA ITO SSC	None
<input checked="" type="checkbox"/>	Smith, Herman	SME	FAA AWP SMS Specialist	None
<input checked="" type="checkbox"/>	Watanabe, Kandyce	Panel Member	FAA HNL ADO	None
<input type="checkbox"/>	Brown, William	Panel Member	FAA HNL ADO	Accepted
<input type="checkbox"/>	Mikhalek, Alex	Panel Member	FAA HFC	None
<input type="checkbox"/>	Wennes, John	SME	FAA HCF	Accepted
<input type="checkbox"/>	Hamamoto, Liane	SME	FAA HCF ATO	None
<input checked="" type="checkbox"/>	Okuna, Neil	Panel Member	FAA HCF ATO	Accepted
<input type="checkbox"/>	Poole, Dottie	SME	FAA HCF ATO	Accepted
<input type="checkbox"/>	Kamakahi, Jacob	SME	FAA HCF	Declined
<input checked="" type="checkbox"/>	Santoro, Joe	Panel Member	FAA RSO	Accepted
<input type="checkbox"/>	Morales, Fernando	SME	FAA RSO	None
<input checked="" type="checkbox"/>	Robertson, Matthew	SME	FAA WSC NPI	Accepted
<input type="checkbox"/>	Ace-Galvan, Natalie	SME	FAA WSC NPI	Tentative
<input checked="" type="checkbox"/>	Clark, Dave	SME	FAA WSC Flight Procedures	Tentative
<input type="checkbox"/>	Heenan, Michael	SME	FAA FSDO	None
<input checked="" type="checkbox"/>	Allen, Scott	SME	FAA RSO	Tentative
<input type="checkbox"/>	Chitwood, Tiffany	SME	FAA CMO	Declined
<input type="checkbox"/>	Guillory, Richard "Rich"	Panel Member	FAA CMO	None

Appendix E

ITO Taxiway and Runway Lighting Replacement Safety Risk Assessment (SRA) Panel

ATTENDANCE

	Name	Panel Member / SME	Company / Agency	Responses as of 3/29
<input checked="" type="checkbox"/>	Delmendo, Perfecto	Panel Member	AvAir Pros	None
<input checked="" type="checkbox"/>	Tarpey, Jeff	SME	AvAir Pros	Accepted
<input type="checkbox"/>	Ilagan, Ed	SME	AvAir Pros	Accepted
<input type="checkbox"/>	Silva, Richard	SME	Hawaiian Airlines	Accepted
<input type="checkbox"/>	Lauritsen, Charles "CD"	Panel Member	Hawaiian Airlines	None
<input type="checkbox"/>	Freitas, Tracy	SME	Hawaiian Airlines	Declined
<input type="checkbox"/>	Gibson, Luana	SME	Hawaiian Airlines	None
<input checked="" type="checkbox"/>	Kuamoo, Mika	SME	Hawaiian Airlines Cargo	None
<input type="checkbox"/>	Wilson, Toni	SME	Southwest Airlines	None
<input checked="" type="checkbox"/>	Hodgson, George	Panel Member	Southwest ATC Support	Accepted
<input type="checkbox"/>	Dagger, Christopher	SME	Southwest Local Leader	None
<input type="checkbox"/>	Agarwal, Ravin	SME	United Airlines	None
<input type="checkbox"/>	Coon, Kevin	SME	United Airlines	None
<input type="checkbox"/>	Litke, Paul	SME	United Airlines	Tentative
<input type="checkbox"/>	Suiaunoa, Nicole	Panel Member	United Ground Express	Accepted
<input type="checkbox"/>	Colbert, Travis	SME	Aloha Air Cargo	Declined
<input type="checkbox"/>	Meyer, Steve	Panel Member	Aloha Air Cargo	None
<input type="checkbox"/>	Sakamoto, Rick	SME	Aloha Air Cargo	None
<input type="checkbox"/>	Smith, Marcel	SME	Aloha Air Cargo	None
<input type="checkbox"/>	Sprowls, Tim	Panel Member	Mokulele Airlines	None
<input type="checkbox"/>	Raihi, Teimour	SME	TransAir	None
<input type="checkbox"/>	Mantz, Darlene Pua	Panel Member	TransAir	Tentative
<input type="checkbox"/>	Saga, Pouli	SME	TransAir	None
<input type="checkbox"/>	Melohn, Bill	Panel Member	AOPA/GACH	None
<input type="checkbox"/>	Myers, Preston	SME	Safari Helicopters	None
<input type="checkbox"/>	Mitchell, Stephanie	SME	Safari Helicopters	None
<input type="checkbox"/>	Murphy, J.C.	SME	Safari Helicopters	None
<input type="checkbox"/>	Hamp, Eric	SME	Blue Hawaiian Helicopters	Tentative
<input type="checkbox"/>	Dorn, Calvin	SME	Paradise Helicopters	None
<input type="checkbox"/>	Malakie, Dan	SME	Paradise Helicopters	None
<input type="checkbox"/>	Navor, Carlos	SME	Paradise Helicopters	None
<input type="checkbox"/>	etrumble@hawaii.rr.com	SME	GA	None
<input type="checkbox"/>	hlhaymore@yahoo.com	SME	GA	None
<input type="checkbox"/>	n34212@gmail.com	SME	GA	None
<input type="checkbox"/>	prambaut@earthlink.net	SME	GA	None
<input type="checkbox"/>	avnav@hotmail.com	SME	GA	None
<input type="checkbox"/>	m.singer@heartwoodpacific.com	SME	GA	Declined

Appendix E

ITO Taxiway and Runway Lighting Replacement Safety Risk Assessment (SRA) Panel

ATTENDANCE

	Name	Panel Member / SME	Company / Agency	Responses as of 3/29
<input type="checkbox"/>	volcopters@aol.com	SME	GA	None
<input type="checkbox"/>	gburk@hotmail.com	SME	GA	None
<input type="checkbox"/>	carolmurray99@gmail.com	SME	GA	None
<input type="checkbox"/>	mark.plgr@gmail.com	SME	GA	None
<input type="checkbox"/>	hawaiiijim@yahoo.com	SME	GA	None
<input type="checkbox"/>	themissingcard@netscape.net	SME	GA	None
<input type="checkbox"/>	danl@hawaii.edu	SME	GA	None
<input type="checkbox"/>	tmoth25@yahoo.com	SME	GA	None
<input type="checkbox"/>	lanipetrie@aol.com	SME	GA	None
<input type="checkbox"/>	drf28@cornell.edu	SME	GA	None
<input checked="" type="checkbox"/>	Ward, Dawn	Co-Facilitator	Base Management	None
<input type="checkbox"/>	Wong, Steve	Co-Facilitator	Base Management	Tentative
<input type="checkbox"/>	Rewick, Ken	Facilitation Support	Base Management	None
<input checked="" type="checkbox"/>	DeMattos, Dalyn	Tech Writer	Base Management	Accepted
<input type="checkbox"/>	Yamauchi, Sue	Tech Writer	Base Management	Accepted
<input checked="" type="checkbox"/>	Dela Cruz, Tanya	Admin Support	Base Management	None

Appendix F
ITO Taxiway and Runway Lighting Replacement
SRA Panel Meeting
March 30, 2022

Safety Assessment Screening for Projects (SAS-1)	Page 3			
SMS ID:				
11. SRM Panel Members and Certification				
<i>We certify that we have reviewed the project documentation and have fully considered the potential hazards (and any proposed mitigation measures) before reaching this determination. Dissenting opinions concerning the determination are included in the report.</i>				
<u>Name</u>	<u>Organization</u>	<u>Title</u>	<u>Date</u>	<u>Signature</u>
12. Airport Certification and Acceptance				
As a duly authorized representative of the sponsor of the airport identified above, I hereby certify that I have reviewed and understand the hazards and mitigation measures identified in the attached documentation. I further certify that I understand it is our legal duty, as sponsor, to ensure that any and all airport-related mitigation measures are fulfilled and documented in a timely manner. Any such commitments on our part represent an obligation under our Federal grant assurances, regardless of whether the FAA participates in the funding of any part of the Proposed Action. Nothing in the FAA's review may be deemed as relieving the sponsor of its legal obligations as owner and operator of the airport.				
Name and Title		Date		Signature
13. FAA SRM Approval				
Hazards were identified and analyzed using standard procedures and processes in accordance with FAA Order 5200.11. Mitigation measures, including draft NOTAM requirements, if necessary, are attached and are included with the formal FAA project approval action. These measures will help ensure safety levels are maintained at acceptable levels both during and after the proposed construction and non-construction airport changes.				
Name and Title		Date		Signature

Appendix G

Ground Rules

- Open, honest communications
- No electronic communications
- No sidebar conversations
- All Panel Members input is important
- Please state your name before speaking
- Please mute microphones when not speaking, remember to unmute before speaking
- Meeting will start and end on time – Breaks should occur periodically, depending on discussion
- Anyone can call an ELMO (Enough, Let's Move On)

****Absence of an answer is understood as agreement****

Appendix H

Definitions

Accident – an unplanned event or series of events that results in death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Cause – events occurring independently or in combination that result in a hazard or failure

Credible – capable of being believed. Worthy of belief or confidence. Sound, rational, defensible, and data driven.

Effect – real or credible harmful outcome that could be created if the hazard occurs in the defined system state.

Hazard – any real or potential condition that can result in injury, illness, or death to people; damage to or loss of a system equipment, or property; or damage to the environment.

Likelihood – the estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. *Likelihood is the estimated probability or frequency of a hazard's effect; often an expression of how often an effect is expected to occur.*

Residual Safety Risk – the remaining safety risk that exists after all control techniques have been implemented or exhausted, and all controls have been verified. *Only verified controls can be used for the assessment of residual safety risk.*

Risk Analysis – the process during which a hazard is characterized for its likelihood and the severity of its effect or harm. Risk analysis can be either quantitative or qualitative; however, the inability to quantify or the lack of historical data on a particular hazard does not preclude the need for analysis.

Risk Assessment- assessment of the system or component to compare the achieved risk level with the tolerable risk level.

Risk Matrix – tool that combines severity and likelihood to assess risks as unacceptable, acceptable with mitigation, and acceptable.

Safety Assessment – a systematic, comprehensive evaluation of an implemented system.

Safety Risk - the composite of the likelihood of the potential effect of a hazard and predicted severity of that effect.

Safety Risk Control (Risk Mitigation) – any action taken to eliminate hazards or to mitigate their effects by reducing the severity and/or likelihood of the risk associated with those hazards. Safety risk controls necessary to mitigate an unacceptable risk should be mandatory, measurable, and monitored for effectiveness.

Safety Risk Management (SRM) - a formal process within the SMS composed of describing the system, identifying the hazards, assessing the risk, analyzing the risk, and mitigating the risk.

Severity – the consequence or impact of a hazard in terms of degree or loss or harm. *Severity is the measure of how bad the results of an event are predicted to be; usually determined by the worst credible outcome.*

Appendix I

Roles and Responsibilities

Facilitator – Responsible to follow the SMS process. Engages the panel to develop a thorough SRM Safety Assessment ensuring all relevant perspectives are considered, soliciting expert advice and building group consensus whenever possible. Cultivates discussion among panel members about potential hazards, risks, and mitigations. Manages conflicts that arise during the panel meeting, including biased observers and dissenting opinions. Facilitator does not make the final decision concerning findings of the panel. If the panel does reach a sound consensus, the FAA Project Manager has the final say on the findings of the panel.

Technical Writer – Documents discussions, PHL, PHA and consensus.

Panel Member – Invited as an SME to participate in discussions, share technical expertise, identify/analyze risks and reach consensus on level of risk. Panel Members are SME's in their own specialized field. They are expected to have the authority to represent and make decisions for their respective organization. Panel Members are required to sign the resulting SRMD or provide dissenting opinion and rationale.

Subject Matter Expert (SME) – Invited for technical expertise and operational responsibilities. If the panel of SME's already consists of someone with your knowledge and background, you do not need to be a panel member. An example of an SME not on a panel is a planning or design consultant who supports the panel through research and preparation of documents.

Appendix J

List of Reference Documents

ACRP Report 1, Volume 1 – SMS for Airports Overview, 2007

ACRP Report 1, Volume 2 – SMS for Airports Guidebook, 2009

ACRP 58 – Safety Reporting Systems at Airports, 2014

ACRP 131 – Guidebook for SRM, 2015

FAA AC 150/5200-37A – Introduction to Safety Management Systems (SMS) for Airport Operators

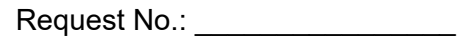
FAA Order 5200.11 Change 3 – FAA Airports (ARP) Safety Management System (SMS), August 2014

FAA Order 8000.369B, Safety Management System

FAA Order 8040.4B, Safety Risk Management Policy

FAA Office of Airports (ARP) SMS Desk Reference, June 2012

Standard Operating Procedure for Safety Risk Management under the FAA Office of Airports Safety Management System



Instructions:

- If you have any questions, contact the Environmental Consultant by email: Environmental@esciencei.com, or Phone: (808) 261-0740 and request HDOT-AIR Environmental Consultant.*

Requestor: _____ Date: _____

Project Engineer: _____

Email: _____ Phone: _____

Department: _____

Title:

Project No:

Project Name: _____

Brief Description of Project and Location (provide coordinates, address, or attach site plans):

SECTION 2. To Be Completed By Environmental Consultant

ESI Reviewer: _____ Date: _____

Email: _____ Phone: _____

Contaminated Soil or Groundwater Documented in Project Area (Yes/No): _____

Comments:

Attached Documents:

Comments:

Based on the available information, confirmed groundwater and soil contamination were not identified beneath the Project Site. However, soil and groundwater contamination was found in the nearby areas to the north and northwest. Contaminated soil was also found in nearby and adjacent areas in the southeastern Project Area.

North of Taxiway-C, at 187 Silva Street, two 8,000-gallon diesel USTs and one 8,000-gallon gasoline UST were found adjacent to Hilo Airport. Historical UST operations resulted in impacts of petroleum hydrocarbons to groundwater, including free product (Integral Consulting, 2010). Environmental investigations took place from 2006 through 2009, which included soil sampling, and the installation of groundwater monitoring wells on and adjacent to airport property in proximity to the northern Project Area. Analytical results indicated subsurface soils at the capillary fringe (18-20 feet bgs) exhibit concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs (DOH 2017, Table B-1). Analytical results for groundwater indicated concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs (DOH 2017, Table D-1d) as well as free-phase product up to 1.76 feet in thickness. Petroleum hydrocarbons remained as free-phase product floating on the groundwater and extended to the Runway area of the airport. This site was issued an NFA with Institutional Controls and Long-Term EHMP (Integral Consulting, 2010). Given the distance to the project, and downgradient position to the Project Area, it appears unlikely the groundwater product plume will impact the Site. However, contractors should be aware that the presence of free-phase product has been identified in the Runway area, with potential to impact groundwater in the near area. Dewatering operations, depending upon site specific locations and pumping rates, could draw petroleum constituents from this area to the dewatering area.

Northwest of Taxiway C, a former Chevron bulk storage Tank No. 19 had a 45,000-barrel capacity. Approximately 35,100-gallons of Bunker C fuel was removed from the bulk storage tank, along with 120,000-gallons of water, and 120 cubic yards of contaminated soil. An environmental response investigation included drilling of borings, groundwater monitoring well installation, and collecting soil and groundwater samples for analysis. Black viscous free-phase petroleum product was encountered in three borings. Additionally, trace free-phase petroleum product was observed during groundwater level measurement events (URS, 2004). Analytical results for soil and groundwater indicated concentrations of TPH-d and TPH-o exceed DOH Tier 1 EALs (DOH 2017, Tables B-1 and D-1d). The site received an NFA in 2007 with a recommendation that an EHMP be prepared, however there are no records indicating an EHMP was prepared. Given the distance to the project, and downgradient position to the Project Area, it appears unlikely the groundwater product plume would impact the Site. However, contractors should be aware that the presence of free-phase product has been identified near the northwestern Project Area, with potential to impact groundwater in the near area. Dewatering operations, depending upon site specific locations and pumping rates, could draw petroleum constituents from this area to the dewatering area.

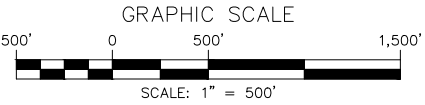
South of Taxiway E, approximately 660-gallons of jet fuel was released by Aloha Airlines in March 2007. Approximately 400-gallons of the spill entered the Runway stormwater drainage system. Hilo Fire Department also applied aqueous film forming foam (AFFF) to prevent the possibility of ignition. Analyses of soil samples in the eastern release area had reported TPH-j concentrations ranging from 404 mg/kg to 1,470 mg/kg. TPH-j soil concentrations ranged from 40.8 mg/kg to 2,950 mg/kg in the northern area samples. The upper TPH-j soil concentration ranges exceed the current DOH EALs (DOH 2017, Table B-1) for middle distillates. In addition, AFFF products may contain emerging PFAS contaminants (LFR, 2007). Due to the proximity and type of contamination found, it is possible perimeter Project Areas may also be contaminated and caution should be taken when subsurface work is being done. There is also the possibility of contamination migration within and around the stormwater system that may traverse the Project Area.



LEGEND:

WORK AREA

- NOTES:
- 1. WORK AREA LIMITS ARE APPROXIMATE.
 - 2. MOST WORK WILL BE WITHIN THE EXISTING TAXIWAY AND RUNWAY ASPHALT SHOULDER.



FILE NAME: 2021.09.20-ito-contamination_review.dwg
PLOT DATE: 9/22/2021 1:10:57 PM



Jacobs

HILO INTERNATIONAL AIRPORT
TAXIWAY AND RUNWAY LIGHTING REPLACEMENT

HDOT PROJECT NUMBER: AH1021-19

CONTAMINATED SOIL AND GROUNDWATER REVIEW FORM
SITE PLAN

DATE: 2021.09.21

REV NO:

EXHIBIT NUMBER



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JADE T. BUTAY
DIRECTOR

Deputy Directors
ROSS M. HIGASHI
EDUARDO P. MANGLALLAN
PATRICK H. MCCAIN
EDWIN H. SNIFFEN

IN REPLY REFER TO:
AIR-EP
22.0002

January 25, 2022

TAXIWAY AND RUNWAY LIGHTING REPLACEMENT
HILO INTERNATIONAL AIRPORT
EXEMPTION NOTICE

Pursuant to Hawaii Revised Statutes (HRS), §343-6(a)(2) and
Hawaii Administrative Rules (HAR), §11-200.1-15

AGENCY ACTION

This is a State of Hawaii, Department of Transportation, Airports Division (HDOT-A), agency action as defined by HRS, §343-5(b), and HAR, §11-200.1-8.

EXEMPTION TYPE

The Exemption Notice for the action described below is based on the general types enumerated in Section 11-200.1-15(c), HAR, Exemption Type:

- (2) Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.

As applicable, the exemption for the action described below is also supported by the Exemption List for the State of Hawaii, Department of Transportation, reviewed and concurred to by the Environmental Council on November 15, 2000.

Exemption Class **2**: Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.

B. Facilities:

2. Upgrade or replace utility and drainage systems to maintain a consistent level of service. Drainage improvements will generally consist of pipe culverts, construction of gutters where minor flooding occurs.

PROJECT INFORMATION

Project Name:	Taxiway and Runway Lighting Replacement
Location:	Hilo International Airport (ITO)
Anticipated Start Date:	3 rd Quarter, 2022
Anticipated End Date:	3 rd Quarter, 2024
Island and District:	Hawaii Island - South Hilo District

Tax Map Key(s): (3) 2-1-012:009, (3) 2-1-012:022, (3) 2-1-013:143
Permits and Approvals: National Pollutant Discharge Elimination System Notice of General Permit Coverage, Construction Type C Permit, State Historic Property Certification, American Disabilities Act Certification

PROJECT DESCRIPTION

The proposed project involves reconstruction of the existing runway and taxiway edge lighting system, the installation of a counterpoise/lightning protection system, and the installation of drainage connections from can plazas to existing storm drain system.

RECEIVING ENVIRONMENT

The proposed project is located within the boundaries of ITO. ITO occupies 1,391 acres, and is located about 2 miles east of Hilo, on the eastern shore of the island of Hawaii. The airport consists of Runway 8-26 and Runway 3-21, various taxiways, aprons, and navigational aids. Runway 8-26 is 9,800 feet long and is used primarily for air carrier operations. Runway 3-21 is 5,600 feet long and is used primarily for general aviation operations. The airport has a single passenger terminal complex, including commuter facilities.

SUMMARY OF ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION

The HDOT-A has considered the potential effects of the proposed project and all related activities against the criteria checked below:

<u>Applicable</u>	<u>Not Applicable</u>
<input type="checkbox"/> Land Use and Zoning Conformance	<input checked="" type="checkbox"/>
<input type="checkbox"/> Traffic (Vehicles, Bicycles, Pedestrian)	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Infrastructure (Roads, Buildings, Utilities)	<input type="checkbox"/>
<input type="checkbox"/> Air Quality Pollutant Emissions	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Noise Emissions	<input type="checkbox"/>
<input checked="" type="checkbox"/> Solid, Hazardous, and Liquid Waste Management	<input type="checkbox"/>
<input type="checkbox"/> Social	<input checked="" type="checkbox"/>
<input type="checkbox"/> Economic	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Health and Safety	<input type="checkbox"/>
<input type="checkbox"/> Recreation	<input checked="" type="checkbox"/>
<input type="checkbox"/> Public Beach Access	<input checked="" type="checkbox"/>
<input type="checkbox"/> Cultural Resources and Practices	<input checked="" type="checkbox"/>
<input type="checkbox"/> Visual/Aesthetic	<input checked="" type="checkbox"/>
<input type="checkbox"/> Environmental Justice	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Rare, Threatened, and/or Endangered Species	<input checked="" type="checkbox"/>

- | | |
|--|-------------------------------------|
| <input checked="" type="checkbox"/> Surface and Ground Water Resources | <input type="checkbox"/> |
| <input type="checkbox"/> Wetlands | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Floodplains | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Riparian/Coastal Resources | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Other | <input checked="" type="checkbox"/> |

All anticipated impacts and mitigation are described and discussed below.

SUMMARY OF IMPACT ANALYSIS AND MITIGATION

Infrastructure (Roads, Buildings, Utilities): Roads and buildings will not be impacted by demolition. Existing utility connections to the edge lighting will remain in place while the new lighting system is installed. There will be coordination with utility companies as necessary.

Noise Emissions: Construction activities will take place during night hours and there is no significant noise impact anticipated. A media release will be coordinated to notify the surrounding areas of the night work.

Solid, Hazardous, and Liquid Waste Management: Construction waste will be recycled when possible and properly disposed at a permitted waste disposal facility.

Health and Safety: Appropriate health and safety precautions will be taken during construction.

Rare, Threatened, and/or Endangered Species: There is no designated critical habitat at ITO. However, endangered avian species including the Hawaiian stilt (*Himantopus mexicanus knudseni*), threatened Newell's shearwater (*Puffinus auricularis newellii*), endangered Hawaiian petrel (*Pterodroma sandwichensis*), endangered band-rumped storm-petrel (*Oceanodroma castro*), and the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may fly over the project site.

No endangered Hawaiian waterbirds or Hawaiian geese (Nene) have been observed at ITO. The threatened and endangered seabirds and the endangered Hawaiian hoary bats are not anticipated to be attracted to the project site. The project is not anticipated to involve any tree removal or installation of barbed wire which could affect bats.

The effects of lighting from night construction activities on seabirds is a major concern for construction activities taking place in Hawaii. Lighting used during night construction will be minimal, shielded, and pointed down to the ground. The United States Department of Agriculture (USDA) was notified of the night work that will occur and wildlife specialists will conduct routine morning checks for any downed seabirds. ITO Airports Operations will also conduct morning inspections of the runways and taxiways to assist if anything is recovered. If seabirds become attracted to the lights, USDA will be notified. The new lighting is a Federal

Aviation Administration (FAA) requirement for runway and taxiway safety. There are no anticipated effects to seabirds from the new lighting.

Surface and Ground Water Resources: Minor surface and groundwater impacts are anticipated. Dewatering, according to local regulations will be conducted as necessary.

CONSULTATION

Consultation was conducted with Airline representatives and FAA during a Pre-Safety Risk Analysis meeting held on November 9, 2021. USDA wildlife staff at ITO were also consulted on December 22, 2021.

EXEMPTION DECLARATION

The primary, secondary, and cumulative impacts of the proposed action described above have been considered pursuant to HRS, Chapter 343, and HAR, Chapter 11-200.1. The Department of Transportation declares that the proposed action described above will have minimal or no significant impact on the environment and is, therefore, exempt from the requirement to prepare an environmental assessment.

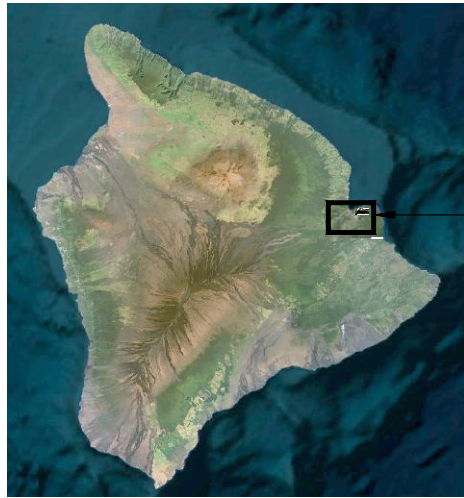


JADE T. BUTAY
Director of Transportation

Jan 24, 2022

Date

Attachment: Vicinity Map



HILO, HAWAII

ISLAND OF HAWAII



HILO INTERNATIONAL AIRPORT

HILO, HAWAII



TAXIWAY AND RUNWAY LIGHTING
REPLACEMENT (PROJECT LOCATION)

HILO INTERNATIONAL AIRPORT

Airports Division

DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

Jacobs

HILO INTERNATIONAL AIRPORT

**TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT**

HDOT PROJECT NUMBER: AH1021-19

PROJECT VICINITY MAP

DATE: 2021.11.23

REV NO:

EXHIBIT NUMBER

1

Table of Contents

Table of Contents	1
CWB NOI Form	2
(Submission #: HPG-CKJ0-H7ER2, version 1)	2
Details	2
Form Input	2
NPDES General Permit Requirements	2
Permittee Information	3
Facility/Project Information	4
Permitted Feature(s) Information (1 of 31)	6
Permitted Feature(s) Information (2 of 31)	7
Permitted Feature(s) Information (3 of 31)	7
Permitted Feature(s) Information (4 of 31)	8
Permitted Feature(s) Information (5 of 31)	8
Permitted Feature(s) Information (6 of 31)	8
Permitted Feature(s) Information (7 of 31)	9
Permitted Feature(s) Information (8 of 31)	9
Permitted Feature(s) Information (9 of 31)	10
Permitted Feature(s) Information (10 of 31)	10
Permitted Feature(s) Information (11 of 31)	10
Permitted Feature(s) Information (12 of 31)	11
Permitted Feature(s) Information (13 of 31)	11
Permitted Feature(s) Information (14 of 31)	12
Permitted Feature(s) Information (15 of 31)	12
Permitted Feature(s) Information (16 of 31)	12
Permitted Feature(s) Information (17 of 31)	13
Permitted Feature(s) Information (18 of 31)	13
Permitted Feature(s) Information (19 of 31)	14
Permitted Feature(s) Information (20 of 31)	14
Permitted Feature(s) Information (21 of 31)	15
Permitted Feature(s) Information (22 of 31)	15
Permitted Feature(s) Information (23 of 31)	15
Permitted Feature(s) Information (24 of 31)	16
Permitted Feature(s) Information (25 of 31)	16
Permitted Feature(s) Information (26 of 31)	17
Permitted Feature(s) Information (27 of 31)	17
Permitted Feature(s) Information (28 of 31)	17
Permitted Feature(s) Information (29 of 31)	18
Permitted Feature(s) Information (30 of 31)	18
Permitted Feature(s) Information (31 of 31)	19
Receiving Drainage System(s) Information (1 of 1)	19
NOI Form C	19
Additional Information	23
Payment Information	23
Attachments	23
Status History	23
Processing Steps	23

CWB NOI Form

version 1.14

(Submission #: HPG-CKJ0-H7ER2, version 1)

Details

Submission Alias CWB NOI Form - ITO_v2

Originally Started By Robbie J.A. Sanches

Submission ID HPG-CKJ0-H7ER2

Submission Reason New

Status Draft

Active Steps Application Submitted

Form Input

NPDES General Permit Requirements

Select the general permit you are requesting coverage under.

Appendix C - Storm Water Associated with Construction Activity

Are you conducting earth-disturbing activities in response to a public emergency that meets the eligibility requirements under HAR, Chapter 11-55, Appendix C, Sections 1.3 and 7.2.3?

No

Notice of Intent (NOI) General Requirements

By submitting this NOI application, you are certifying the following statements:

- I read HAR, Chapters 11-54 and 11-55;
- I understand that State law prohibits any water pollutant to be discharged to a State water except in compliance with HAR, Chapters 11-54 and 11-55;
- I understand that the NPDES General Permits are a privilege and not my right or entitlement;
- I understand that the NPDES General Permits are rules, not permits to be issued;
- I understand that the NPDES General Permits only authorize a specific discharge/activity when I comply with all conditions of the NPDES General Permit;
- I have read every condition of the NPDES General Permit I am requesting coverage under;
- I have determined that my project/activity and organization can, and will, comply with every condition of the applicable NPDES General Permit, and any and all legal obligations;
- I understand that I may only submit the NOI after determining that my project/activity and organization can, and will, comply with every condition of the applicable NPDES General Permit;
- I understand that if I cannot comply with any condition of the NPDES General Permit I need to either fix my organization so that I can comply or I cannot discharge water pollutants to State waters;
- I understand that the Notice of General Permit Coverage (NGPC) is not a permit; it is an authorization to comply with the already issued NPDES General Permit;
- I will design, implement, operate, and maintain appropriate treatment/controls to ensure that my activity/discharge will not violate HAR, Chapters 11-54 and 11-55;
- I have reported any "after the fact" discharges to the CWB enforcement section; and
- The information provided in this application does not include "after the fact" discharges/activities.

I certify under penalty of law that my proposed discharge will not impair any State waters (including but not limited to rivers, streams, wetlands, ponds, ground waters, and ocean), Native Hawaiian cultural resources (including but not limited to burial sites/iwi, heiau, and taro loi), or the exercise of traditional Native Hawaiian cultural practices.

Yes, I certify.

Is this an NOI to continue coverage under a newly re-adopted general permit? This means that you either have a currently effective or administratively extended NGPC under the previous general permit.

No

Is this an NOI for a currently issued NGPC, that due to changes in the project/facility, you are required to obtain a new NGPC? Examples of changes include additions of discharge points or disturbance area(s). Please note that a new NGPC must be issued prior to the project commencing the new activities that were not covered under the currently issued NGPC.

No

Permittee Information

Operator Applying to Obtain Permit Coverage on Behalf of Owner

Operators may apply for and receive NPDES permit coverage on behalf of the Owner provided that authorization is granted by the Owner.

If an Operator specifies that they are applying to obtain NPDES permit coverage on behalf of the Owner, the permit will be issued to the Operator and will be the legal entity that the permit coverage is issued to.

Do NOT specify that the Operator is applying on behalf of the Owner if the Operator is only preparing the NOI for the Owner and WILL NOT be designated as the Permittee.

This option is to allow for Operators to be designated as the Permittee for projects that are owned by a different entity.

Is the Permittee the operator of the project or activity applying on behalf of the project or activity owner?

No

Select the Permittee Organization Type

State

Permittee Legal Name

State of Hawaii

Permittee Department/Office

Department of Transportation

Permittee Division/Program (Optional)

Airports

Permittee Mailing Address

400 Rodgers Blvd, Ste 700
Honolulu, HI 96819

Permittee Street Address

400 Rodgers Blvd, Ste 700
Honolulu, HI 96819

Select the appropriate signatory type and confirm that the Certifying Person meets the requirements for the corresponding type. The Certifying Person has to meet the applicable requirement and be employed by the Permittee.

State Agency

State Agency

I certify that for a state agency, I am a principal executive officer or ranking elected official.

Certifying Person Salutation

Mr.

Certifying Person Information

First Name	Last Name	
Jade	Butay	
Title Director of Transportation		
Phone Type	Number	Extension
Other	808-587-2150	

Certifying Person Email

jade.butay@hawaii.gov

Permittee Contact Salutation

Mr.

Permittee Contact Information

First Name	Last Name	
Brant	Yamamoto	
Title Project Manager, Hawaii DOT-Airports		
Phone Type	Number	Extension
Business	808-838-8828	
Mobile	808-723-0219	

Permittee Contact Email

brant.m.yamamoto@hawaii.gov

Do you wish to designate an authorized representative?

No

Facility/Project Information**Facility/Project Type of Ownership**

State

Facility Organization Formal Name

Department of Transportation Airports

Facility Site or Project Name

Taxiway and Runway Lighting Replacement

City where the project/facility is located.

Hilo

Island where the project/facility is located.

Hawaii Island

Facility/Project Mailing Address

2450 KEKUANAOA ST
HILO INTERNATIONAL AIRPORT
Hilo, HI 96720

Provide the Facility/Project site address. If no formal street address exists (e.g., for projects constructing new developments with no currently existing roads) enter a location description instead. You must still enter a City, State, and ZIP Code.

2450 KEKUANAOA ST
HILO INTERNATIONAL AIRPORT
Hilo, HI 96720

TMK Nos.

Division (e.g., 1)	Zone (e.g., 9)	Section (e.g., 7)	Plat (e.g., 025)	Portion, Parcel, or Lot (e.g., Lots 1-10, 15, & 20)
3	2	1	12	009

Facility/Project Site Front Gate Location Coordinates or Start of Linear Construction Location Coordinates

19.715180296222073,-155.04392262753908

Facility/Project Contact Affiliation

Main Contact

Facility/Project Contact Salutation

Mr.

Facility/Project Contact Person Information**First Name Last Name**

Brant Yamamoto

Title

Project Manager

Organization Name

Department of Transportation Airports

Phone Type Number Extension

Other 808-723-0219

Facility/Project Contact Person Email

brant.m.yamamoto@hawaii.gov

Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) Codes

Provide your primary SIC and NAICS code associated with your facility and any co-located activities. The primary SIC and NAICS code are the codes that best describe the primary economic activity at the facility. For co-located activities covered by multiple SIC codes, it is recommended that the primary industrial determination be based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared. The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged. In situations where the vast majority of on-site activity falls within one SIC code, that activity may be the primary industrial activity.

Sector and subsector information are only applicable for industrial storm water coverages.

For construction activities, the SIC code(s) are those that most accurately describe the activities of the Permittee.

SIC Codes

SIC Codes may be found at the link below.

[SIC Codes](#)

NAICS Codes

NAICS Codes may be found at the link below. Click on Concordances to access the SIC to NAICS code spreadsheets.

[NAICS Codes](#)

Primary SIC and NAICS Code

Primary SIC Code	Corresponding NAICS Code	Sector	Subsector
1731	238210		

Are there any additional SIC and NAICS codes?

No

Existing or Pending Permits, Licenses or Approvals

Provide the permit number for any applicable Federal, State, or County permits, licenses, or approvals for the project.

Other permits, licenses and approvals include but are not limited to:

- NPDES Individual Permit
- NPDES NGPC
- Section 401 WQC

- Individual Wastewater System Approval
- Recycled Water Reuse Permit
- Hazardous Waste Permit
- Solid Waste Management Permit
- Underground Storage Tank Permit
- Underground Injection Control Permit
- Agricultural Burning Permit
- Air Pollution Control Permit
- Department of the Army Permit (Section 404)

Note: If your project requires work in, above, under or adjacent to State waters, please contact the Army Corps of Engineers (USACE) Regulatory Branch at (808) 438-9258 regarding their permitting requirements.

Are there any other existing or pending NPDES permits/NGPCs associated with this project/facility?

No

Are there any other existing or pending (non-NPDES) permits, licenses or approvals associated with this project/facility?

No

Is the facility on the Superfund Amendments and Reauthorization Act (SARA)313 list?

No

Topographic Map(s)

Attach a topographic map or maps to this submission of the area extending at least one mile beyond the property boundaries of the site which clearly show the following:

1. Island on which the project/facility is located;
2. Legal boundaries of the site;
3. Location and an identification number for each of the site's existing and proposed intake and discharge structures; and
4. Receiving state water(s) and receiving storm water drainage system(s) identified and labeled. If the receiving state water is a wetland, submit a map showing the delineated wetland.

Specify the names of the map(s) that identify these items below.

Topographic Maps

[Attachment A_Online.pdf - 05/04/2022 12:57 PM](#)

Comment

NONE PROVIDED

Required Maps

Required Map	Submitted Map(s) Name(s)
Island on Which the Project/Facility is Located	Figure 1
Legal Boundaries of the Site	Figure 1
Location and an Identification Number for Each of the Site's Existing and Proposed Intake and Discharge Structures (i.e., discharge points/outfalls)	Figures 1, 3-6
Receiving State Water(s) and Receiving Storm Water Drainage System(s) Identified and Labeled and Wetland Delineations	Figures 1, 3-6

Permitted Feature(s) Information (1 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BED

Permitted Feature Location

-155.06111589,19.71467937

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (2 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BF1

Permitted Feature Location

-155.05921925,19.716761

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (3 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BFB

Permitted Feature Location

-155.05741165,19.7169036

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (4 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BFD

Permitted Feature Location

-155.05710151,19.71724249

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (5 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BAE

Permitted Feature Location

-155.05672973,19.72070041

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (6 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BB0

Permitted Feature Location

-155.05423951,19.720668

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (7 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BB6

Permitted Feature Location

-155.05245252,19.72066502

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (8 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BDA

Permitted Feature Location

-155.05387237,19.7193124

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (9 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BDE

Permitted Feature Location

-155.05257594,19.71968415

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (10 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BE2

Permitted Feature Location

-155.0528621,19.72216714

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (11 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BF3

Permitted Feature Location

-155.05693569,19.7192672

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (12 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BF5

Permitted Feature Location

-155.05570081,19.72062243

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (13 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BF7

Permitted Feature Location

-155.05446574,19.72197784

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (14 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BF9

Permitted Feature Location

-155.05256617,19.72406242

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (15 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19C01

Permitted Feature Location

-155.05510049,19.71976504

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (16 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BB8

Permitted Feature Location

-155.05158249,19.7206677

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (17 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BBA

Permitted Feature Location

-155.04997513,19.7206648

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (18 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BBC

Permitted Feature Location

-155.0495443,19.72066475

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (19 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BBE

Permitted Feature Location

-155.04873092,19.72066304

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (20 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BC0

Permitted Feature Location

-155.0466964,19.72066559

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (21 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BC2

Permitted Feature Location

-155.04453005,19.7206648

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (22 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BD0

Permitted Feature Location

-155.04244121,19.72066352

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (23 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BD2

Permitted Feature Location

-155.04926983,19.71963652

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (24 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BD4

Permitted Feature Location

-155.05095396,19.71968277

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (25 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BDC

Permitted Feature Location

-155.05095378,19.71918687

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (26 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BC4

Permitted Feature Location

-155.05223602,19.71968393

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (27 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BC6

Permitted Feature Location

-155.03955032,19.72066233

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (28 of 31)

Permitted Feature Type

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BC8

Permitted Feature Location

-155.03747719,19.72066177

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (29 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BCA

Permitted Feature Location

-155.03389264,19.72066369

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (30 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BCC

Permitted Feature Location

-155.0319891,19.72066332

Is the receiving State water on the Section 303(d) List?

No

Permitted Feature(s) Information (31 of 31)**Permitted Feature Type**

External Outfall

Receiving State Waters Name for Permitted Feature

groundwater, Reeds Bay

Watershed Name for Permitted Feature

Wailoa

Receiving State Water Classification

Class A, Marine

Receiving Water Type

Embayment

Permitted Feature Identifier (Name, e.g., 001, 002, 003, etc.)

19BCE

Permitted Feature Location

-155.03012619,19.72066134

Is the receiving State water on the Section 303(d) List?

No

Receiving Drainage System(s) Information (1 of 1)**Does the discharge enter a STORMWATER DRAINAGE SYSTEM before discharging into the receiving State Waters?**

No

NOI Form C**C.1 - General Information**

You are required to fulfill all requirements. By submitting the NOI, you are certifying the following statements:

- I prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with HAR, Chapter 11-55, Appendix C, Section 7 prior to submitting this NOI;
- I will comply with all terms, conditions, and requirements in HAR Chapter 11-55, Appendix C;
- I will implement, operate, and maintain my SWPPP to ensure that storm water discharges associated with construction activities will not violate HAR, Chapter 11-54; HAR, Chapter 11-55; and HAR, Chapter 11-55, Appendix C;

C.2 - Existing Pollution Sources/History of Land Use**Describe the history of land use at the existing Facility/Project site:**

Under Governor Executive Order No. 186 dated April 2, 1925, 100 acres of land in Keaukaha, Waiakea, South Hilo was set aside for an aviation landing field. In 1935, Hilo Airport consisted of a grassy coral and a filled area with two runways. During World War II, Hilo Airport was taken over by the Army Corps of Engineers. Military installations were installed, and the runways, taxiways, and parking aprons were expanded. In April 1952, the airport was returned to civilian control. By June 1954, the airport included a passenger terminal, freight terminal, and parking area.

Other improvements include: A separate passenger terminal for military traffic (1957), a new 9,800-foot jet runway extension (1963), a fire and rescue equipment building to house State owned and Air Force aircraft fire fighting units (1965), a new passenger terminal (1976), and eight T-hangars (1993).

Determine if the existing Facility/Project site may contain any existing pollution source(s) by using the following references. Select all references you utilized to determine existing pollution source(s). You are required to check at least one reference.

Past land use history
Soil sampling data, if available



Describe any existing pollution source(s) identified in the references you selected above.

Northwest of Taxiway C, analyses of soil samples in the eastern release area reported TPH-j concentrations ranging from 404 mg/kg to 1,470 mg/kg. TPH-j soil concentrations ranged from 40.8 mg/kg to 2,950 mg/kg in the northern area samples. The upper TPH-j soil concentration ranges exceed the current DOH EALs for middle distillates.

North of Taxiway-C, analytical results indicated subsurface soils at the capillary fringe (18-20 feet bgs) exhibit concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs (DOH 2017, Table B-1). Analytical results for groundwater indicated concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs as well as free-phase product up to 1.76 feet in thickness. Petroleum hydrocarbons remained as free-phase product floating on the groundwater and extended to the Runway area of the airport.

Northwest of Taxiway C, analytical results for soil and groundwater indicated concentrations of TPH-d and TPH-o exceed DOH Tier 1 EALs.

Hazard Evaluation and Emergency Response (HEER) Office

You are also required to check the Department of Health, Hazard Evaluation and Emergency Response (HEER) Office Sites, Incidents and Records through the  Viewer  in iHEER at the link below.

Note: The HEER Office is currently updating site information for sites. Most, but not all sites may be displayed on the viewer map. Site Document data upload is ongoing and not all documents may be currently available via this website. To get the complete record for the site, a record request form can be filled and submitted it to the HEER Office. The request form can be at: <https://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/public-records>. Users will then be notified when they are able to download all information via the iHEER system website.

[iHEER](#)

Describe any existing pollution source(s) identified in the references you checked above and from HEER Office Sites, Incidents and Records

North of Taxiway-C, historical UST operations resulted in impacts of petroleum hydrocarbons to groundwater, including free product (Integral Consulting, 2010). This site was issued an NFA with Institutional Controls and Long-Term EHMP (Integral Consulting, 2010).



Northwest of Taxiway C, trace free-phase petroleum product was observed during groundwater level measurement events (URS, 2004). In addition, AFFF products may contain emerging PFAS contaminants (LFR, 2007).

South of Taxiway E, approximately 660-gallons of jet fuel was released by Aloha Airlines in March 2007. Approximately 400-gallons of the spill entered the Runway stormwater drainage system. Hilo Fire Department applied AFFF to prevent the possibility of ignition.

Describe any corrective measures that have been undertaken for any existing pollution source(s):

There are no known existing pollution sources within the proposed Project Site or near vicinity. Therefore, no corrective measures have been proposed.

Note

You are required to contact the Department of Health, Office of Hazard Evaluation and Emergency Response at (808) 586-4249 and through e-permitting Form  Notification of Construction Activities  at Form Finder from the link below, if contaminated soil, vapor, or groundwater is known to be present at your project site. Notify at least 90 days prior to surface and subsurface disturbing activities (demolition, building/site configuration changes, grading, excavation, or prior to any other activities) that may disturb the ground surface at HEER sites. If you missed the 90 days notification time frame, notify the HEER Office as soon as possible to avoid any potential delays regarding your project.

[Notification of Construction Activities Form](#)

C.3 - Construction Site Estimates

Please provide the following estimates for the construction site.

Parameter	Area	Units
Total project area including areas to be left undisturbed	273.4	acres
Construction site area to be disturbed including storage and staging areas	10.87	acres
Impervious area before construction	148.1	acres

Parameter	Area	Units
Impervious area after construction	148.1	acres

C.4 - Quantity of Storm Water Runoff

Estimate the quantity of storm water runoff during construction when the greatest and/or maximum area of disturbance occurs. Provide the supporting calculations.

Storm Water Runoff Quantity	Units
39.11	Cubic Feet per Second (CFS)

Storm Water Runoff Supporting Calculations

[ITO Storm Water Runoff_2022-4-8.pdf - 04/08/2022 03:02 PM](#)

Comment

NONE PROVIDED

C.5 - Soil Characterization

Describe the nature of the soil on the project site (including the potential to encounter contaminated soil) and the nature of the fill material to be used.

According to the United States Department of Agriculture National Resource Conservation Service, the soil at the site is classified as Papai-Urban land complex, 2 to 10 percent slopes. A typical profile for this soil type consists of extremely cobbly and highly decomposed plant material from 0 to 10 inches, cobbles from 10 to 53 inches, and bedrock from 53 to 63 inches. Additionally, this soil type is described as well-drained with low runoff.

Soil at the site is primarily Pahoehe lava flow basaltic rock, cobbles and cinder. There are some intermittent occurrences of volcanic soil (silty clay).

C.6 - Nature and Sequence of Construction Activity

What is the nature of the construction activity (Select all applicable activity(ies))?

Other: the reconstruction/replacement of the Airfield Ground Lighting (AGL) system at Hilo International Airport

What is being constructed?

- ❖ New LED runway and taxiway edge lights, base cans, and isolation transformers
- ❖ New concrete-encased conduits with counterpoise cable and ground rods
- ❖ New airfield lighting cable
- ❖ New constant current regulators
- ❖ Updates to existing Airfield Lighting Control and Monitoring System (ALCMS)
- ❖ Patching of asphalt shoulder pavement
- ❖ Pavement markings
- ❖ New taxiway edge lighting of currently unlit portions of Taxiway C (north of Runway 8-26, south of Taxiway K), Taxiway K, and T-Hangar access taxilanes
- ❖ Drainage connections from can plazas to existing storm drain system
- ❖ New LED airfield signs

Describe the scope of work and major construction activities you wish to be covered in this NOI, including baseyards and staging areas. You may only include project areas where the locations of impervious structures are known; project areas where the final grades are known; and work areas that will be performed by one (1) general contractor. A separate NOI will be required for all other project areas.

The project will replace aging runway and taxiway edge light fixtures, base cans, and conduit, and install a new counterpoise system for lightning protection. Existing guidance signs will be replaced with LED signs, replacing regulators at the existing airfield lighting vault, and conduit connections to existing drainage structures from base cans, hand holes, and manholes.

Excavation will be limited to trenching for conduit and base cans with depth ranging from 2 to 3 feet. Existing electrical hand holes and/or manholes will be removed. Where these structures are removed, the hole will be backfilled with granular or flowable fill and pavement surface restored. The project will likely involve directional drilling for conduit installation, at depths up to approximately 6 feet. All spoils from excavation/trenching are to be backfilled or disposed on site. De-watering of the existing conduits, base cans, and hand holes is anticipated, to allow for removal and pavement patching.

Is a County-approved Erosion and Sediment Control Plan and/or Grading Permit, where applicable for the activity and schedule for implementing each control, required?

No

Please select and complete at least one (1) of the following items to demonstrate that a County-approved Erosion and Sediment Control Plan and/or Grading Permit, as appropriate for the activity and schedule for implementing each control, is not required.

Other: This is a DOTA State Project

C.7 - Project Site Maps and Construction Plans/Drawings

Attach, title, and identify all maps (pdf - minimum 300 dpi) listed below.

Please reference which maps account for the features listed below.

Project Site Maps and Construction Plans/Drawings

[Attachment A_Online.pdf - 05/04/2022 12:57 PM](#)

Comment

NONE PROVIDED

Vicinity of the project on the island.

Figure 1

Boundaries of 100-Year flood plans.

Figure 2

Areas of soil disturbance.

Figures 7-20

Location(s) of impervious structures (including buildings, roads, parking lots, etc.) after construction is completed.

Figures 7-20

Pre-Construction Topography including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to the receiving State water(s) (with flow arrows).

Figures 7-20

During-Construction Topography (after major grading activities) including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to the receiving State water(s) (with flow arrows).

Figures 7-20

Post-Construction Topography including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to the receiving State water(s) (with flow arrows).

Figures 7-20

C.8 - Construction Schedule

Provide the following estimated dates.

The date when construction activity will begin.

02/01/2023

The date when each major construction activity begins. This includes those activities identified in Section 7.2.5 of HAR 11-55 Appendix C.

Major Construction Activity	Major Construction Activity Begin Date
Site preparation (i.e., excavating, cutting, and filling)	02/01/2023
Final grading	02/01/2023
Creation of soil and vegetation stockpiles requiring stabilization	02/01/2023
Cessation of construction activities	05/06/2024
Final or temporary stabilization (to be completed within 14 calendar days	05/06/2024
Removal of temporary stormwater conveyances/channels and other temporary stormwater control measures	05/16/2024

The date when the Notice of Cessation form will be submitted.

05/16/2024

Additional Information

Additional Information

DOTA-SWPPP_2022-05-05.pdf - 05/04/2022 01:27 PM

Comment

SWPPP

Payment Information

How are you planning to pay the filing fee for this submission?

Online Payment

Attachments

Date	Attachment Name	Context	Confidential?	User
5/4/2022 1:27 PM	DOTA-SWPPP_2022-05-05.pdf	Attachment	No	Robbie Sanches
5/4/2022 12:57 PM	Attachment A_Online.pdf	Attachment	No	Robbie Sanches
5/4/2022 12:57 PM	Attachment A_Online.pdf	Attachment	No	Robbie Sanches
4/8/2022 3:02 PM	ITO Storm Water Runoff_2022-4-8.pdf	Attachment	No	Robbie Sanches

Status History

	User	Processing Status
3/22/2022 9:12:34 PM	Robbie J.A. Sanches	Draft

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Application Submitted		
Assign To		
In Review		
Issue NGPC		



Taxiway and Runway Lighting Replacement Stormwater Pollution Prevention Plan (SWPPP)



STATE OF HAWAII, DEPARTMENT OF
TRANSPORTATION, AIRPORTS DIVISION
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

May 5, 2022

Disclaimer and General Instructions

This template is provided for informational purposes to assist designers and contractors of State of Hawai'i, Department of Transportation, Airports Division (DOTA) construction projects and Tenant Improvement Projects (TIPs), in preparing a Stormwater Pollution Prevention Plan (SWPPP) for projects that require a National Pollutant Discharge Elimination System (NPDES) permit. DOTA requires all projects to implement Best Management Practices (BMPs) for environmental protection. This template should be modified to specify site-specific BMPs appropriate for the project and site conditions, and used in conjunction with the most recent version of the DOTA *Construction Activities BMP Field Manual* provided on the DOTA webpage.¹ Projects needing an NPDES permit must also meet the requirements of Hawaii Administrative Rules (HAR) Chapter 11-55 Appendix A and C.

A SWPPP must be developed prior to submittal of a Notice of Intent (NOI) Form C to the Department of Health, Clean Water Branch (DOH). For NOIs that are to be certified by the Director of the State of Hawaii Department of Transportation (HDOT), the NOI and SWPPP must be submitted to DOTA AIR-EE for review and acceptance prior to submission to the Director.

The permittee is required to keep a current hard or electronic copy of the SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request. If an onsite location is unavailable for the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of the construction site.

Throughout the template, **orange-highlighted fields must be completed by the designer and gray-highlighted fields should be completed by the designer or contractor** with project-specific information.

Each SWPPP shall be evaluated on its own merits according to the characteristics of the project and the site to be developed. The following projects are exempt from the construction review process:

- ☐ Interior renovations, provided the total combined exterior staging areas are less than one (1) acre.
- ☐ Minor land disturbance activities performed on a single lot with less than 0.25 acre of disturbed and exposed soil caused by construction activities and as approved by DOTA, Engineering Branch, Environmental Section (AIR-EE).
- ☐ Milling and replacement of pavement surfaces of runways, taxiways, or other paved areas that do not expose the underlying base course or subgrade material.
- ☐ Utility Repair Work, provided the disturbed area as defined by DOH is less than one acre.
- ☐ Maintenance and repair activities.

It should be noted that exempt projects are still required to implement appropriate BMPs to ensure that construction activities do not discharge pollutants into the storm drainage system or stormwater runoff. DOTA's template for a Site Specific BMP (SSBMP) Plan is available to guide designers and contractors in selecting appropriate BMPs for sites that don't need an NPDES permit.

Application of BMPs shall comply with applicable federal, state, and county regulations. Use of this template does not guarantee compliance with environmental regulations or DOTA plan approval. Users of this template shall assume all liability directly or indirectly arising from the use of the template. Users of this template should use their best professional judgment and sound engineering principles and seek advice from appropriately qualified professionals to determine the applicability of the information provided for site-specific application and selection of BMPs.

¹ <https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Project Name

Taxiway and Runway Lighting Replacement

DOTA Project Number

AH1021-19

Project Address and Airport Location

450 Kekuanaoa Street, Suite 215 Hilo, HI 96720

Hilo International Airport, Hilo, HI

Notice of General Permit Coverage

File No.

Prepared By:

JACOBS / [Contractor]

SWPPP Preparation Date

May 5, 2022

Table of Contents

SECTION 1	PROJECT DESCRIPTION.....	7
1.1	SITE DESCRIPTION	7
1.2	PROJECT DESCRIPTION	9
1.2.1	<i>Emergency-Related Projects</i>	<i>10</i>
1.3	SITE CONDITIONS.....	10
1.3.1	<i>Contaminated Soil.....</i>	<i>10</i>
1.3.2	<i>Buffer Documentation</i>	<i>11</i>
1.4	PROJECT SITE MAPS AND PLANS.....	12
1.5	STORMWATER TEAM	13
1.6	TRAINING	14
1.7	GENERAL AND SUBCONTRACTOR IDENTIFICATION	14
1.8	ESTIMATED DATES OF CONSTRUCTION ACTIVITIES	15
1.9	STATE, FEDERAL, COUNTY, AND OTHER PERMITS/APPROVALS.....	16
1.9.1	<i>Solid Waste Disclosure Form.....</i>	<i>16</i>
1.9.2	<i>Compliance with Safe Drinking Water Act Underground Injection Control Requirements.....</i>	<i>16</i>
SECTION 2	BEST MANAGEMENT PRACTICES	17
2.1	EROSION CONTROL BMPs	17
2.2	SEDIMENT CONTROL BMPs.....	18
2.3	TRACKING CONTROL BMPs	18
2.4	SITE ACTIVITIES POTENTIAL POLLUTANT CONTROL BMPs.....	18
2.5	MATERIAL AND WASTE MANAGEMENT.....	19
2.6	OTHER STORMWATER CONTROLS	20
2.7	PERMANENT BMP SELECTION.....	20
2.8	SPILL RESPONSE	21
2.9	STABILIZATION PRACTICES	22
SECTION 3	BMP INSPECTION AND MAINTENANCE.....	22
3.1	CONSTRUCTION BMP INSPECTION AND MAINTENANCE	22
3.1.1	<i>Contractor Self-Inspection</i>	<i>23</i>
3.1.2	<i>Initial Inspection.....</i>	<i>23</i>
3.1.3	<i>Routine Independent Inspections.....</i>	<i>23</i>
3.1.4	<i>Final Inspection</i>	<i>24</i>
3.2	CORRECTIVE ACTION	24
3.3	SWPPP AMENDMENTS	25

Attachments

ATTACHMENT A: PROJECT MAPS AND PLANS

ATTACHMENT B: TRAINING LOGS AND SUBCONTRACTOR CERTIFICATIONS

ATTACHMENT C: SCHEDULE

ATTACHMENT D: STATE, FEDERAL, COUNTY, AND OTHER PERMITS/APPROVALS

ATTACHMENT E: CONSTRUCTION ACTIVITIES BMP FIELD MANUAL AND MANUFACTURER'S SPECIFICATION SHEET FOR
BMP PRODUCTS

ATTACHMENT F: SPILL RESPONSE

ATTACHMENT G: INSPECTION REPORTS

ATTACHMENT H: SWPPP AMENDMENT LOG

Certification of the SWPPP

The certifying person (HDOT Director) or duly authorized representative hereby certifies, signs, and dates the SWPPP in accordance with Section 15 of Appendix A, Hawaii Administrative Rules, Chapter 11-55.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____ Date: _____

Name: _____

Company or Agency / Department: _____

Title: _____

Phone number: _____ Email Address: _____

Note: The HDOT Director is the Certifying Person per 40 CFR 122.22(a)(3), as a "principal executive officer or ranking elected official."

A Duly Authorized Representative may be authorized in writing by the Certifying Person and must be an individual or position having responsibility for the overall operation of the regulated facility or activity. For a contractor to become a Duly Authorized Representative, the "NPDES Construction Permitting Guidance for DOT Submittals" should followed for approval by DOTA and DOH if this information was not included in the original NOI Form C submittal to DOH. There shall be only one Duly Authorized Representative at any time, and they may be changed by DOTA at any time during the term of the NPDES permit. The "NPDES Construction Permitting Guidance for DOT Submittals" is located here: <https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

Section 1 Project Description

1.1 SITE DESCRIPTION

The Taxiway and Runway Lighting Replacement Project site comprises approximately 273.4 acres and is located at Hilo International Airport, 450 Kekuanaoa Street, Suite 215, in Hilo, Hawaii. The Project site is located within the Hilo International Airport. The Project site is located approximately 1660 feet west of Reeds Bay.

NEAREST STATE WATER²

Nearest State Water	Reeds Bay
Project Distance from Nearest State Water	1664 Feet
Project Discharge Coordinates* (Long/Lat) [Storm Water enters dry wells]	Discharge Point 19BED (-155.06111589, 19.71467937)
	Discharge Point 19BF1 (-155.05921925, 19.716761)
	Discharge Point 19BFB (-155.05741165, 19.7169036)
	Discharge Point 19BFD (-155.05710151, 19.71724249)
	Discharge Point 19BAE (-155.0567297, 19.722070041)
	Discharge Point 19BB0 (-155.0542395, 19.720668)
	Discharge Point 19BB6 (-155.0524525, 19.72066502)
	Discharge Point 19BDA (-155.05387237, 19.7193124)
	Discharge Point 19BDE (-155.05257594, 19.71968415)
	Discharge Point 19BE2 (-155.0528621, 19.72216714)
	Discharge Point 19BF3 (-155.05693569, 19.7192672)
	Discharge Point 19BF5 (-155.05570081, 19.72062243)
	Discharge Point 19BF7 (-155.05446574, 19.72197784)
	Discharge Point 19BF9 (-155.05256617, 19.72406242)
	Discharge Point 19C01 (-155.05510049, 19.71976504)

² HRS §342D-1 defines "State Waters" as all waters, fresh, brackish, or salt, around and within the State, including, but not limited to, coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes. For purposes of this SWPPP, canals and drainage ditches specified in DOTA NPDES Permits HIS000005 and HI14E349 shall be included in this section. Stormwater control features (e.g., conveyance channels, storm drain inlets, sediment basins) are not considered State waters.

	Discharge Point 19BB8 (-155.05158249, 19.7206677)
	Discharge Point 19BBA (-155.04997513, 19.7206648)
	Discharge Point 19BBC (-155.0495443, 19.72066475)
	Discharge Point 19BBE (-155.04873092, 19.72066304)
	Discharge Point 19BC0 (-155.0466964, 19.72066559)
	Discharge Point 19BC2 (-155.04453005, 19.7206648)
	Discharge Point 19BD0 (-155.04926983, 19.71963652)
	Discharge Point 19BD2 (-155.05095396, 19.71968277)
	Discharge Point 19BD4 (-155.05095378, 19.71918687)
	Discharge Point 19BDC (-155.05223602, 19.71968393)
	Discharge Point 19BC4 (-155.04244121, 19.72066352)
	Discharge Point 19BC6 (-155.03955032, 19.72066233)
	Discharge Point 19BC8 (-155.03747719, 19.72066177)
	Discharge Point 19BCA (-155.03389264, 19.72066369)
	Discharge Point 19BCC (-155.0319891, 19.72066332)
	Discharge Point 19BCE (-155.03012619, 19.72066134)

*Coordinates where potential discharge would first meet State receiving water.

1.2 PROJECT DESCRIPTION

Project Area: <i>(i.e., limits of construction activities)</i>	11,909,304	ft ²	273.4	Ac
Phase 1 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	25,673	ft ²	0.59	Ac
Phase 2a Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	13,937	ft ²	0.32	Ac
Phase 2b Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	42,201	ft ²	0.97	Ac
Phase 3 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	34,056	ft ²	0.78	Ac
Phase 4 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	70,029	ft ²	1.61	Ac
Phase 5 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	11,535	ft ²	0.26	Ac
Phase 6 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	26,828	ft ²	0.62	Ac
Phase 7 Disturbed Area <i>(i.e., staging, storage, stockpile areas, access to project site)</i>	155,550	ft ²	3.57	Ac
Construction Support Activity Area 1	49,710	ft ²	1.14	Ac
Construction Support Activity Area 2	44,172	ft ²	1.01	Ac
Total Project Disturbed Area³: <i>(Phase 1-7 Disturbed Areas + Construction Support Activity Areas)</i>	473,691	ft ²	10.87	Ac

Construction activities will be conducted in various phases. See Figures 7-20 in Attachment A.

The purpose of this project is to replace aging runway and taxiway edge light fixtures, base cans, and conduit, and install a new counterpoise system for lightning protection. Existing guidance signs will also be replaced with LED signs, replacing regulators at the existing airfield lighting vault, and conduit connections to existing drainage structures from base cans, hand holes, and manholes.

Excavation will generally be limited to trenching for conduit and base cans with depth ranging from 2 to 3 feet. Existing electrical hand holes and/or manholes will be removed which are typically expected to be approximately 4 feet deep, but may be up to 8 feet deep. Where these structures are removed, the hole will be backfilled with granular or flowable fill and pavement surface restored. Project will also likely involve directional drilling for conduit installation, at depths up to approximately 10 feet. All spoils from excavation/trenching are expected to be backfilled or disposed on site. De-watering of the existing conduits, base cans, and hand holes is anticipated, to allow for removal and pavement patching.

³ HAR 11-55 Appendix C defines "Disturbance of land" as the penetration, turning, or moving of soil or resurfacing of pavement with exposure of the base course or the exposure of bare soil or ground surface, including the land surface exposed by construction roads, baseyards, staging areas, demolition, headquarters, and parking areas. It does not include grass or weed cutting, bush or tree trimming or felling that leaves soil or ground intact. It includes "grubbing" in its normal meaning of the use of equipment to knock down and push vegetation out of the way, typically uprooting vegetation and disturbing the ground surface.

1.2.1 Emergency-Related Projects

This project is in response to a public emergency.

☐ Yes ☒ No

1.3 SITE CONDITIONS

The Project site is currently operates as the Hilo International Airport. The Project site was previously developed in 1925, under Governor' Executive Order No. 186. 100 acres of land in Keaukaha, Waiakea, South Hilo was set aside for an aviation landing field. In 1935, Hilo Airport consisted of a grassy coral and a filled area with two runways. During World War II, Hilo Airport was taken over by the Army Corps of Engineers. Military installations were installed, and the runways, taxiways, and parking aprons were expanded. In April 1952, the airport was returned to civilian control. By June 1954, the airport included a passenger terminal, freight terminal, and parking area.

Other improvements include: A separate passenger terminal for military traffic (1957), a new 9,800-foot jet runway extension (1963), a fire and rescue equipment building to house State owned and Air Force aircraft fire fighting units (1965), a new passenger terminal (1976), and eight T-hangars (1993).

The west side of the project site slopes toward the south. The east side of the project site slopes toward the east. The elevation of the Project site ranges from 41 to 51 feet above Mean Sea Level (MSL). Surface drainage at the site currently flows to the south of the project site, towards dry wells. The storm water that percolates in the dry wells will end up in Reeds Bay. The project will maintain the existing site drainage patterns.

Existing and proposed site topography, drainage patterns, and stormwater conveyance systems are shown on Figures 7-20 in Attachment A.

1.3.1 Contaminated Soil

Contaminated soils are anticipated onsite.

☐ Yes ☒ No

Based on the available information, confirmed groundwater and soil contamination were not identified beneath the Project Site. However, soil and groundwater contamination was found in the nearby areas to the north and northwest. Contaminated soil was also found in nearby and adjacent areas in the southeastern Project Area.

North of Taxiway-C, at 187 Silva Street, two 8,000-gallon diesel USTs and one 8,000-gallon gasoline UST were found adjacent to Hilo Airport. Historical UST operations resulted in impacts of petroleum hydrocarbons to groundwater, including free product (Integral Consulting, 2010). Environmental investigations took place from 2006 through 2009, which included soil sampling, and the installation of groundwater monitoring wells on and adjacent to airport property in proximity to the northern Project Area. Analytical results indicated subsurface soils at the capillary fringe (18-20 feet bgs) exhibit concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs (DOH 2017, Table B-1). Analytical results for groundwater indicated concentrations of TPH-d and TPH-o which exceed DOH Tier 1 EALs (DOH 2017, Table D-1d) as well as free-phase product up to 1.76 feet in thickness. Petroleum hydrocarbons remained as free-phase product floating on the groundwater and extended to the Runway area of the airport. This site was issued an NFA with Institutional Controls and Long-Term EHMP (Integral Consulting, 2010). Given the distance to the project, and downgradient position to the Project Area, it appears unlikely the groundwater product plume will impact the Site. However, contractors should be aware that the presence of free-phase product has been identified in the Runway area, with potential to impact groundwater in the near area. Dewatering operations, depending upon site specifics locations and pumping rates, could draw petroleum constituents from this area to the dewatering area.

Northwest of Taxiway C, a former Chevron bulk storage Tank No. 19 had a 45,000-barrel capacity. Approximately 35,100-gallons of Bunker C fuel was removed from the bulk storage tank, along with 120,000-gallons of water, and 120 cubic yards of contaminated soil. An environmental response investigation included drilling of borings, groundwater monitoring well installation, and collecting soil and groundwater samples for analysis. Black viscous free-phase petroleum product was encountered in three borings. Additionally, trace free-phase petroleum product was observed during groundwater level measurement events (URS, 2004). Analytical results for soil and groundwater indicated concentrations of TPH-d and TPH-o exceed DOH Tier 1 EALs (DOH 2017, Tables B-1 and D-1d). The site received an NFA in 2007 with a recommendation that an EHMP be prepared, however there are no records indicating an EHMP was prepared. Given the distance to the project, and downgradient position to the Project Area, it appears unlikely the groundwater product plume would impact the Site. However, contractors should be aware that the presence of free-phase product has been identified near the northwestern Project Area, with potential to impact groundwater in the near area. Dewatering operations, depending upon site specific locations and pumping rates, could draw petroleum constituents from this area to the dewatering area.

South of Taxiway E, approximately 660-gallons of jet fuel was released by Aloha Airlines in March 2007. Approximately 400-gallons of the spill entered the Runway stormwater drainage system. Hilo Fire Department also applied aqueous film forming foam (AFFF) to prevent the possibility of ignition. Analyses of soil samples in the eastern release area had reported TPH-j concentrations ranging from 404 mg/kg to 1,470 mg/kg. TPH-j soil concentrations ranged from 40.8 mg/kg to 2,950 mg/kg in the northern area samples. The upper TPH-j soil concentration ranges exceed the current DOH EALs (DOH 2017, Table B-1) for middle distillates. In addition, AFFF products may contain emerging PFAS contaminants (LFR, 2007). Due to the proximity and type of contamination found, it is possible perimeter Project Areas may also be contaminated and caution should be taken when subsurface work is being done. There is also the possibility of contamination migration within and around the stormwater system that may traverse the Project Area.

References:

Integral Consulting. (2010). "Environmental Hazard Management Plan."

LFR Inc. (2007). "Short Term Release Response Report."

URS Corporation. (2004). "Additional Site Characterization Report and Soil Removal and Disposal."

URS Corporation. (2006). "Semiannual Groundwater Monitoring Report."

1.3.2 Buffer Documentation

If a State water is located within 50 feet of the project's earth disturbances, additional protection must be implemented. Delineate and clearly mark off with flags, tape, or other similar marking device natural buffer areas. Note: It is not required to enhance the quality of the vegetation that already exists in the buffer, or to provide vegetation if none exists.

☒ The project is not located within 50 feet of State waters.

☐ A 50-foot undisturbed natural buffer and sediment control will be provided.

☐ A less than 50-foot natural undisturbed natural buffer and double sediment controls spaced a minimum of 5 feet apart will be provided.

☐ It is infeasible to provide and maintain an undisturbed natural buffer of any size. [Describe why it is infeasible to provide and maintain an undisturbed natural buffer of any size.] Double sediment control spaced a minimum of 5 feet apart will be provided and complete stabilization will occur within 7 calendar days of the temporary or permanent cessation of earth-disturbing activities.

☐ This is a linear construction project (construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) in a long, narrow area and is not required to comply with this requirement since site constraints (e.g., limited right-of-way) prevent meeting any of the compliance alternatives stated above provided that, to the extent practicable, disturbances within 50 feet of State waters are limited and/or erosion and sediment controls are provided to treat stormwater discharges from earth disturbances within 50 feet of the State water.

1.4 PROJECT SITE MAPS AND PLANS

SWPPP Attachment A contains site maps and figures for SWPPP Sections 1.1 through 1.3, including construction support activity areas covered by this permit:

Figure 1	Location Map
Figure 2	Flood Zones
Figure 3	Inset Map 1
Figure 4	Inset Map 2
Figure 5	Inset Map 3
Figure 6	Inset Map 4
Figure 7	Contractor Staging and Access Plan
Figure 8	Erosion Control Notes
Figure 9	Erosion Control Plan – Staging Areas
Figure 10	Erosion Control Plan – Phase 1
Figure 11	Erosion Control Plan – Phase 2A
Figure 12	Erosion Control Plan – Phase 2B
Figure 13	Erosion Control Plan – Phase 3
Figure 14	Erosion Control Plan – Phase 4
Figure 15	Erosion Control Plan – Phase 4
Figure 16	Erosion Control Plan – Phase 5
Figure 17	Erosion Control Plan – Phase 6
Figure 18	Erosion Control Plan – Phase 7
Figure 19	Erosion Control Plan – Phase 7
Figure 20	Erosion Control Details
Figures 21-22	Stormwater Runoff Calculations

1.5 STORMWATER TEAM

The following personnel comprise the stormwater team. Each member of the stormwater team must have ready access to an electronic or paper copy of applicable portions of the Project's Notice of General Permit Coverage (NGPC), an updated copy of the SWPPP, and other relevant project documentation or information.

Name: Brant Yamamoto
Company: Department of Transportation – Airports Division, Engineering Branch
Title: Project Manager
Responsibilities: As the Permittee, DOTA oversees the project's technical components including erosion and sediment control plans, responds to contractor Requests for Information, and overall project compliance in accordance with HAR 11-55, Appendix C.
Phone number: 808-838-8033
Email address: brant.m.yamamoto@hawaii.gov

Name: Amy Hunley
Company: Department of Transportation – Airports Division, Environmental Section (AIR-EE)
Title: Environmental Health Specialist
Responsibilities: As the Permittee, DOTA oversees project compliance with HAR 11-55, Appendix C. AIR-EE (or AIR-EE Consultant) is responsible for construction design review, conducting monthly inspections and reports, determining and issuing items of non-compliance, and working with the State Hazard Evaluation and Emergency Response and DOH for escalated non-compliance, as needed.
Phone number: 808-838-8033
Email address: amy.r.hunley@hawaii.gov

Name: [Name]
Company: [Construction Management Firm]
Title: [Project Engineer or Manager]
Responsibilities: Responsible for verifying implementation of onsite BMPs. Can serve as liaison between contractor, DOTA, and/or DOTA consultant. [Modify text as needed]
Phone number: [Phone number]
Email address: [Email address]

Name: [Name]
Company: [Contractor]
Title: [Supervisor, Project Manager, Project Engineer]
Responsibilities: Overall site compliance with NCPG and in accordance with HAR 11-55, Appendix C. [Modify text as needed]
Phone number: [Phone number]
Email address: [Email address]

Name: [Name]
Company: [Contractor]
Title: [Contractor's Onsite Environmental Representative]
Responsibilities: A qualified person ⁴ responsible for maintaining overall site compliance in accordance with HAR 11-55 Appendix C, conducting weekly and monthly BMP inspections, maintaining onsite BMPs, coordinating Corrective Action items, maintaining onsite SWPPP including amendments and modifications. [Modify text as needed]
Phone number: [Phone number]
Email address: [Email address]

Name: [Name]
Company: [Contractor]
Title: [Contractor's] Emergency 24-hour Contact
Responsibilities: [Contractor's] emergency 24-hour contact representative. [Modify text as needed]
Phone number: [Phone number]
Email address: [Email address]

[Add or delete rows as needed]

1.6 TRAINING

DOTA requires key and supervisory personnel of the general/prime construction company and subcontractors (i.e. Contractor's onsite environmental representatives, site managers, engineers.) to view the DOTA's *Construction BMP Training* video and complete the Construction BMP Quiz before earth-disturbing construction activities are allowed to commence on the site. This training must be completed annually with the completed quizzes submitted to DOTA AIR-EE and included in this SWPPP Attachment B along with a log of those personnel who completed the DOTA Training. Additional Information is included in Attachment B.

It is also required for all personnel of the general/prime contractor and subcontractors to be trained on the site-specific BMPs that are utilized during construction, as well as spill response. All new employees must complete the required training, regardless of the stage of the project. A log of those personnel who received the training should be included in Attachment B.

1.7 GENERAL AND SUBCONTRACTOR IDENTIFICATION

The DOTA requires that the Contractor must ensure that their subcontractors' personnel and other outside service providers understand any requirements of the permit that may be affected by the work they are subcontracted to perform, the SWPPP contents, and location of the SWPPP.

Company Legal Name: [General/Prime Contractor]
Point of Contact and Title: [Contractor's POC and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]

⁴ Per HAR 11-55, Appendix C, Section 9.1.1., a "qualified person" is defined as, "a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit."

Street Address: [Street address]
Phone number: [Phone number]
Email address: [Email address]

Company Legal Name: [Subcontractor]
Point of Contact and Title: [Contractor's POC and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Street Address: [Street address]
Phone number: [Phone number]
Email address: [Email address]

Company Legal Name: [Subcontractor]
Point of Contact and Title: [Contractor's POC and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Street Address: [Street address]
Phone number: [Phone number]
Email address: [Email address]

Company Legal Name: [Subcontractor]
Point of Contact and Title: [Contractor's POC and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Street Address: [Street address]
Phone number: [Phone number]
Email address: [Email address]

Company Legal Name: [Subcontractor]
Point of Contact and Title: [Contractor's POC and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Street Address: [Street address]
Phone number: [Phone number]
Email address: [Email address]

[Add or delete rows as needed]

1.8 ESTIMATED DATES OF CONSTRUCTION ACTIVITIES

Complete installation of stormwater controls prior to earth-disturbance⁵ and make operational any downgradient sediment controls (e.g., buffers or equivalent sediment controls, perimeter controls, exit point controls, storm drain inlet protection) that control discharges from the initial site clearing, grading, excavating, and other land-disturbing activities.

Use good engineering practices and follow manufacturer's specifications. Install all stormwater controls in accordance with good engineering practices, including applicable design specifications.

Include a schedule of dates below for the following activities and a complete schedule in Attachment C.

⁵ The requirement to install stormwater controls prior to earth-disturbance of the project does not apply to the earth disturbance associated with the installation of these controls.

Table 1. Sequence and Estimated Dates of Construction Activities

Activity	Start Date	Duration <input checked="" type="checkbox"/> Calendar days <input type="checkbox"/> Work days	N/A
Installation of stormwater control measures	Feb. 1, 2023		<input type="checkbox"/>
Clearing and grubbing			<input checked="" type="checkbox"/>
Mass grading			<input checked="" type="checkbox"/>
Site preparation (i.e., excavating, cutting, and filling)	Feb. 1, 2023	460	<input type="checkbox"/>
Final grading	Feb. 1, 2023	460	<input type="checkbox"/>
Creation of soil and vegetation stockpiles requiring stabilization	Feb. 1, 2023	460	<input type="checkbox"/>
Cessation of construction activities	May 6, 2024		<input type="checkbox"/>
Final or temporary stabilization (to be completed within 14 calendar days)	May 6, 2024	10	<input type="checkbox"/>
Removal of temporary stormwater conveyances/channels and other temporary stormwater control measures, demobilization of equipment, and cessation of pollutant-generating activities.	May 16, 2024		<input type="checkbox"/>

1.9 STATE, FEDERAL, COUNTY, AND OTHER PERMITS/APPROVALS

A copy of the Notice of General Permit Coverage (NGPC) and Notice of Intent (NOI) Form C for this project are included in Attachment D.

Other State, Federal, and County Permits required for this project include: FAA/NEPA Cat. Ex.

1.9.1 Solid Waste Disclosure Form

The Solid Waste Disclosure Form shall be filled out and is included in Attachment D. This form helps the Department of Health, Solid Waste Section (SWS) to identify sources of construction/demolition waste and site clearing debris. Property owners, developers, operators and contractors are responsible for ensuring the proper disposal of such solid waste. Violators of Chapter 11-58.1, HAR, "Solid Waste Management Control," are subject to enforcement, corrective actions, and fines.

1.9.2 Compliance with Safe Drinking Water Act Underground Injection Control Requirements

The following stormwater controls are anticipated for the site as noted below.

Table 2. Safe Drinking Water Act Applicability

Class V UIC Wells	Applicable
Infiltration trenches (stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Commercially manufactured precast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

The Projects will not include any Class V UIC Wells.

Section 2 Best Management Practices

INSTRUCTIONS

- ☐ *Complete the checklists in each of the following BMP categories to note the appropriate project-specific BMPs. Note that certain BMPs required for all projects are described before the checklist in each category.*
- ☐ *For BMPs marked as applicable, include sheets from the DOTA Construction Activities Best Management Practices (BMP) Field Manual and Manufacturer's Specification Sheet in SWPPP Attachment E.*

2.1 EROSION CONTROL BMPs

Erosion control BMPs consist of measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles.

The Project will implement the following erosion control practices during construction:

1. Protect and preserve existing vegetation in and adjacent to work areas for as long as practicable before disturbing it.
2. Schedule and sequence construction activities and BMP implementation in a manner that will limit exposure of disturbed soil to wind, rain, and stormwater run-on and runoff.
3. Control the area of soil disturbing operations such that erosion control BMPs can be implemented quickly and effectively.
4. Control erosion in concentrated flow paths by applying check dams or alternate methods.
5. At the completion of construction, ensure revegetation of unpaved areas is established as required by the project plans in disturbed soil areas.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP.

The following erosion control BMP selection table indicates the BMPs that shall be implemented to control erosion on the construction site.

Table 3. Erosion Control BMPs

BMP Name	Applicable	
	YES	NO
C.1 Scheduling	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.2 Preservation of Existing Vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.3 Location of Potential Sources of Sediment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.4 Earth Dike	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.5 Temporary Drains and Swales	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.6 Dust Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.7 Topsoil Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.8 Geotextiles and Mats	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.9 Grass and Planting*	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*Consult with the State Engineer or District Manager on types of preferred grasses and methods used.

2.2 SEDIMENT CONTROL BMPS

Sediment control BMPs are temporary or permanent structural measures intended to complement the selected erosion control measures to reduce sediment discharges from active construction areas. Sediment control BMPs are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

The following sediment control BMP selection table indicates the BMPs that shall be implemented to control sediment on the construction site.

Table 4. Sediment Control BMPs

BMP Name	Applicable	
	YES	NO
C.10 Sand Bag Barrier	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.11 Compost Filter Berm or Sock	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.12 Storm Drain Inlet Protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.13 Sediment Trap	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.14 Silt Fence	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.3 TRACKING CONTROL BMPS

Tracking control BMPs are temporary or permanent structural measures intended to reduce sediment discharges from vehicles and equipment exiting active construction areas.

Where there is track-out from the site onto other paved areas, and sidewalks, remove the deposited sediment **by the end of the same work day in which the trackout occurs or by the end of the next work day if track-out occurs during non-working hours**. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal.

Hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or state water is prohibited.

The following tracking control BMP selection table indicates the BMPs that shall be implemented to control sediment track-out from the construction site.

Table 5. Tracking Control BMPs

BMP Name	Applicable	
	YES	NO
C.15 Stabilized Construction Entrance/Exit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.16 Construction Road Stabilization	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2.4 SITE ACTIVITIES POTENTIAL POLLUTANT CONTROL BMPS

Unauthorized non-stormwater discharges into storm drainage systems or waterways are prohibited. A separate NPDES permit is required by DOH for non-stormwater discharges.

The following table indicates BMPs that shall be implemented to control potential pollutants on the construction site.

Table 6. Site Activities Potential Pollutant Control BMPs

BMP Name	BMP Used	
	YES	NO
C.17 Dewatering Operations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.18 Paving Operations and Waste Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.19 Structure Construction and Painting	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.20 Vehicle and Equipment Cleaning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.21 Vehicle and Equipment Fueling	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.22 Vehicle and Equipment Operation and Maintenance	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.23 Concrete Curing Water and Compounds Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.24 Hydrotesting Effluent Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.25 Water-Jet Wash and Hydro-Demolition Water Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.5 MATERIAL AND WASTE MANAGEMENT

Material and waste management BMPs consist of implementing procedural and structural BMPs to prevent the release of construction materials and wastes into stormwater discharges. The amount and type of construction materials to be utilized at the Project will depend on the type of construction and the length of the construction period. The materials may be used continuously, such as fuel for vehicles and equipment, or for a discrete period, such as soil binders for temporary stabilization.

Material and waste management BMPs shall be implemented to minimize stormwater contact with construction materials, wastes and service areas, and to prevent potential pollutants from the materials and wastes from being discharged offsite. The primary mechanisms for stormwater contact that shall be addressed include:

- ☐ Direct contact with precipitation
- ☐ Contact with stormwater run-on and runoff
- ☐ Wind dispersion of loose materials
- ☐ Direct discharge to the storm drainage system through spills or dumping
- ☐ Extended contact with some materials and wastes, such as asphalt cold mix and treated wood products, which can leach pollutants into stormwater.

The following material and waste management BMP selection table indicates the BMPs that shall be implemented to handle materials and control construction site wastes associated with these construction activities.

Table 7. Material and Waste Management BMPs

BMP Name	Applicable	
	YES	NO
C.26 Material and Delivery Storage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.27 Material Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.28 Protection of Stockpiles	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.29 Solid Waste Management – Hazardous Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.30 Solid Waste Management – Debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.31 Contaminated Soil Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.32 Concrete Operation and Waste Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.33 Sanitary/Septic Waste Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.34 Spill Prevention and Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BMP Name	Applicable	
	YES	NO
C.35 Spill Response Practices	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.36 Management of Materials Associated with Paint	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2.6 OTHER STORMWATER CONTROLS

Other stormwater controls or pollution prevention practices that do not fit into the above categories:
[Provide description of the site-specific stormwater control and implementation, or write NONE if not used]

2.7 PERMANENT BMP SELECTION

INSTRUCTIONS

- *Complete the conditions assessment checklist below to determine if Permanent BMPs (PBMPs) are needed. If any condition is checked "Yes," describe PBMPs to be implemented or reasons why PBMPs are not required.*
- *Provide a narrative description of the how BMPs selected will be used to prevent erosion and contamination of stormwater following construction.*

Permanent BMPs (PBMPs) are measures installed during construction, designed to reduce or eliminate pollutant discharges from the site after construction is completed. The Project will include the following features for which DOTA requires some type of PBMPs:

Table 8. Project Features

Condition	YES	NO
Construction activities that result in land disturbance of one (1) acre or more	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Steep earthen slopes (i.e., grade of 20 percent or more)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parking lots and buildings adding 10,000 square feet or more of impervious area within 50 feet of a surface waterbody	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Uncontained aircraft, vehicle, or equipment washing area	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fueling area or petroleum storage that exceeds the regulatory threshold for Spill Prevention, Control, and Countermeasure (SPCC) plans in Title 40 Part 112 of the Code of Federal Regulations (i.e., 1,320 gallons above ground)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mobile refueler ⁶ parking or storage area	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modifying, replacing, or installing new MS4 drainage structures	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The following PBMPs have been identified to address the above:

- Revegetation of any disturbed unpaved areas

The Project is exempt from PBMP requirements by meeting one or more of the following:

Table 9. PBMP Exemptions

Condition	YES	NO
-----------	-----	----

⁶ Per Title 40 Part 112 of the Code of Federal Regulations, "a mobile refueler means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container."

The Project solely involves trenching and/or resurfacing associated with utility work, provided the ground surface consists of hardscape and unpaved areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The Project solely involves resurfacing or replacement of damaged pavement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stormwater runoff does not ultimately discharge to a receiving water	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The Project will return the area to pre-development runoff conditions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PBMPs are prohibited due to aircraft safety concerns	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other: 	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.8 SPILL RESPONSE

INSTRUCTIONS

- **Download and insert the applicable airport Spill Reporting Fact Sheet and Spill Reporting Form. Insert into SWPPP Attachment F.**
- **Indicate the personnel responsible for detection and response of spills or leaks in the rows below.**

Materials used and stored at the site have the potential to spill and contaminate stormwater runoff and surface water bodies. In case of spills, the applicable airport Spill Reporting Fact Sheet in SWPPP Attachment F will be followed and the Spill Reporting Form will be filled out.

Spills must be immediately reported per DOH and/or Federal requirements (DOTA has additional requirements) if one or more of the following conditions apply:

- ☐ If the release is more than 25-gallons of petroleum product.
- ☐ If the release is 25-gallons or less of petroleum product but is not contained or remedied within 72 hours.
- ☐ If the release is equal to or exceeds the reportable quantity criteria for one or more chemicals listed within the State Hazard Evaluation and Emergency Response office Technical Guidance Manual (TGM): <http://www.hawaiidoh.org/tgm-pdfs/TGM%20Section%2002-D.pdf>.
- ☐ If the release enters a storm drain or water body.

Personnel responsible for detection and response of spills or leaks include:

Company: [Contractor]
Name and Title: [Personnel name and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Phone number: [Phone number]
Email address: [Email address]

Company: [Contractor]
Name and Title: [Personnel name and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]
Phone number: [Phone number]
Email address: [Email address]

Company: [Contractor]
Name and Title: [Personnel name and title]
Scope of Work: [e.g., Electrical, mechanical, or plumbing subcontractor]

Phone number: [Phone number]
Email address: [Email address]

[Add or delete rows as needed]

2.9 STABILIZATION PRACTICES

Soil stabilization measures should **begin immediately** when earth-disturbing activities have permanently ceased or temporarily ceased for a period of 14 calendar days or more on any portion of the site. “Immediately” means as soon as practicable, but no later than the end of the next workday. Examples of initial stabilization include:

1. Preparing the soil for vegetative or non-vegetative stabilization;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Planting the exposed area;
 - o Immediately after planting the exposed area, install erosion control that will provide cover while vegetation is becoming established, but that will not inhibit the growth or success of the planting.
4. Starting any of the activities in items 1-3 on a portion of the area to be stabilized, but not on the entire area; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

Soil stabilization measure should be **complete as soon as practicable, but no later than 14 calendar days** after the initiation of soil stabilization measures. Completed stabilization includes all activities necessary to initially plant the area to be stabilized and/or the installation or application of all non-vegetative measures.

If unable to meet the deadlines in this section due to circumstances beyond their control, document the circumstance that prevent the meeting of the deadlines and provide a schedule for the initialing and completion of the stabilization. Refer to HAR 11-55 Appendix C, Section 5.2.1.3.1 for additional information.

Criteria for Final Stabilization:

To be considered adequately stabilized, vegetative areas shall provide established uniform vegetation with 70% or more of the density of coverage that was present prior to commencing earth-disturbing activities. Vegetative cover must be perennial and use of invasive species should be avoided.

Section 3 BMP Inspection and Maintenance

3.1 CONSTRUCTION BMP INSPECTION AND MAINTENANCE

INSTRUCTIONS

- *Include completed inspection forms in SWPPP Attachment G, or in an accompanying file/binder that is referenced in the SWPPP, and readily accessible onsite.*

Inspect the receiving state waters, stormwater runoff, and stormwater control measures to detect violations of and conditions which may cause violations of the basic water quality criteria. BMPs shall be regularly maintained for proper and effective functionality.

3.1.1 Contractor Self-Inspection

Contractors are required to conduct self-inspections of the site to ensure that BMPs are effective, and activities are not causing a polluted discharge. **Self-inspections must be conducted and recorded weekly, and after a significant rainfall of 0.25 inch or greater occurring in a 24-hour period.** Findings from this inspection may trigger corrective actions, such as SWPPP amendments or BMP maintenance. Contractor self-inspection reports, SWPPP Amendments, and an updated BMP plan reflecting current site conditions shall be retained on site or at an accessible location for the duration of the project. They must be made available at the time of an on-site inspection, or upon request by DOTA, DOTA AIR-EE, DOH, or an EPA Representative.

BMPs that are deemed not effective, shall be replaced immediately with a more effective BMP and the BMP Plan should be updated to reflect the change. Refer to the Stormwater Team (SWPPP Section 1.5) for the contractor's qualified person responsible for conducting inspections, maintaining BMPs, and coordinating Corrective Action items.

Rain Gauge information: <https://www.weather.gov/hfo/RRA>

A link to various types of sample inspections reports is located in SWPPP Attachment G. The contractor can use these forms or another similar form to document construction site inspections. Completed inspection reports are located in SWPPP Attachment G.

3.1.2 Initial Inspection

Prior to the commencement of construction activities, AIR-EE, or their independent designated erosion and sediment control inspector, will conduct an Initial Site BMP Inspection. Prior to this inspection, the soil may only be disturbed to the extent that is required to install the site-specific temporary BMPs. All deficiencies that are observed during the inspection must be addressed and corrected by the Contractor and approved by the BMP inspector **before construction activities are allowed to commence** on the site.

3.1.3 Routine Independent Inspections

Independent BMP inspectors are qualified DOTA staff or representatives who are not involved in the day-to-day planning, design, or implementation of the construction contract. The independent inspectors act on behalf of DOTA to perform **monthly BMP inspections** for construction sites that have NPDES permit coverage. However, the frequency of the inspection can be altered by the inspector under the following conditions.

1. The inspector may suspend monthly inspections if there will be no construction activities conducted on the site for a period of 30 calendar days or more, and the disturbed soil has been stabilized.
2. The inspection frequency may decrease to quarterly, if, during three successive monthly inspections of a project, no critical or major deficiencies are identified and less than six total minor deficiencies are identified over the three monthly inspections, with no more than three minor deficiencies identified during any one inspection of those three month inspections.

As a part of the inspection, all documentation for environmental compliance of the site (e.g. SWPPP or BMP plan, applicable permits, site inspections, and training records) must be made available by the contractor for review by the inspector. The inspector will verify that site conditions match those included in the site documents and that BMPs are properly maintained and effective in containing potential pollutants. Any deficiencies identified during these inspections must be promptly corrected by the contractor as follows:

Table 10. Construction Deficiency Types

Critical Deficiency	Timeline For Correction
Poses an immediate threat for the discharge of pollutants to the MS4 or receiving water. Examples: illicit discharge, absence of perimeter controls in an area with signs of sediment transport off-site, spills that have not been cleaned near a drain or waterway.	Same day
Major Deficiency	Timeline For Correction
Poses a significant threat for the discharge of pollutants to a storm drain or receiving water. Examples: lack of NPDES permit (if required), lack of BMP plan, perimeter BMPs are not functional, dewatering without BMPs, tracking more than 50' from ingress/egress. This may also include any deficiency that is observed as a repeat deficiency over consecutive inspections. (i.e. Repeated Deficiency.)	5 calendar days or before the next forecasted rain event, whichever is sooner
Minor Deficiency	Timeline For Correction
Deficiencies that do NOT pose a treat for discharge of untreated stormwater or pollutants to the storm drain system, surface waters, or State waters, but are not in strict conformance with the SWPPP or BMP Plan. Examples: BMP plan is not updated, contractor self-inspections are not conducted, BMPs are implemented but require maintenance, tracking less than 50' from ingress/egress.	As directed by the inspector.

3.1.4 Final Inspection

AIR-EE, or their designated independent BMP inspector, will conduct a Final BMP Inspection after construction work has permanently ceased. This includes installation of required PBMPs and stabilizing exposed soil. All deficiencies that are observed during the inspection must be addressed and corrected by the Contractor. **BMPs cannot be removed from the site until approval is documented within the Final Inspection Checklist and granted by DOTA or the independent BMP inspector. .**

It should be noted that a partial Final BMP inspection can be conducted on a portion(s) of the site, in which construction activity has permanently ceased, all equipment and materials are removed, and sufficient stabilization is reached and will follow the above inspection protocols.

3.2 CORRECTIVE ACTION

Corrective actions are actions taken to 1) repair, modify, or replace any stormwater control used at the site; 2) clean up and properly dispose of spills, releases, or other deposits; and 3) remedy a permit violation. Under all circumstances, reasonable steps shall be taken to immediately⁷ minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

The inspector will inform the contractor of the method for conveying the documentation of the corrective actions, which may include emailing photos showing the corrections or conducting a re-inspection. After all deficiencies have been corrected by the contractor and accepted by the inspector, the inspector will provide a Corrective Action Report showing all closed deficiencies.

⁷ "Immediately" refers to the same day the corrective action is found. If the problem is identified at a time in the work day when it is too late to initiate corrective action, the initiation of corrective action must begin on the following work day.

3.3 SWPPP AMENDMENTS

This SWPPP shall be amended to address changes to the site conditions and requirements for continuous compliance with the Project's permit. For additional information and instructions, please see Appendix H, SWPPP Amendment Log.

SWPPP Attachments

Attachment A - Project Maps and Plans

Attachment B - Training Logs and Subcontractor Certifications

Attachment C - Schedule

Attachment D - State, Federal, County, and Other Permits/Approvals

Attachment E - Construction Activities BMP Field Manual and Manufacturer's Specification Sheet for
BMP Products

Attachment F - Spill Response

Attachment G - Inspection Reports

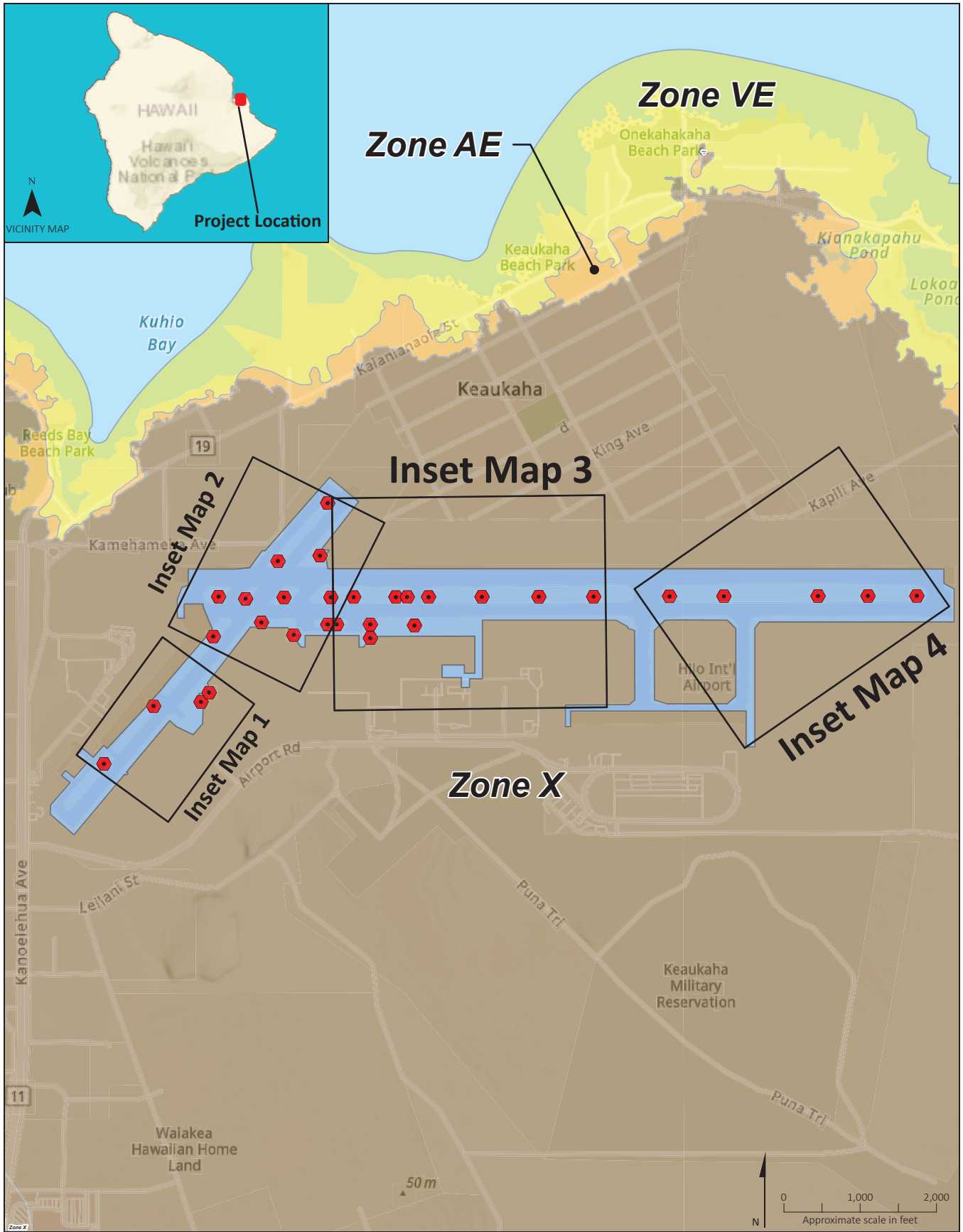
Attachment H - SWPPP Amendment Log

Attachment A

Project Maps and Plans

Figure 1	Location Map
Figure 2	Flood Zones
Figure 3	Inset Map 1
Figure 4	Inset Map 2
Figure 5	Inset Map 3
Figure 6	Inset Map 4
Figure 7	Contractor Staging and Access Plan
Figure 8	Erosion Control Notes
Figure 9	Erosion Control Plan – Staging Areas
Figure 10	Erosion Control Plan – Phase 1
Figure 11	Erosion Control Plan – Phase 2A
Figure 12	Erosion Control Plan – Phase 2B
Figure 13	Erosion Control Plan – Phase 3
Figure 14	Erosion Control Plan – Phase 4
Figure 15	Erosion Control Plan – Phase 4
Figure 16	Erosion Control Plan – Phase 5
Figure 17	Erosion Control Plan – Phase 6
Figure 18	Erosion Control Plan – Phase 7
Figure 19	Erosion Control Plan – Phase 7
Figure 20	Erosion Control Details
Figures 21-22	Stormwater Runoff Calculations





LEGEND

- ⬡ Discharge Point to State Waters
- Project Limits

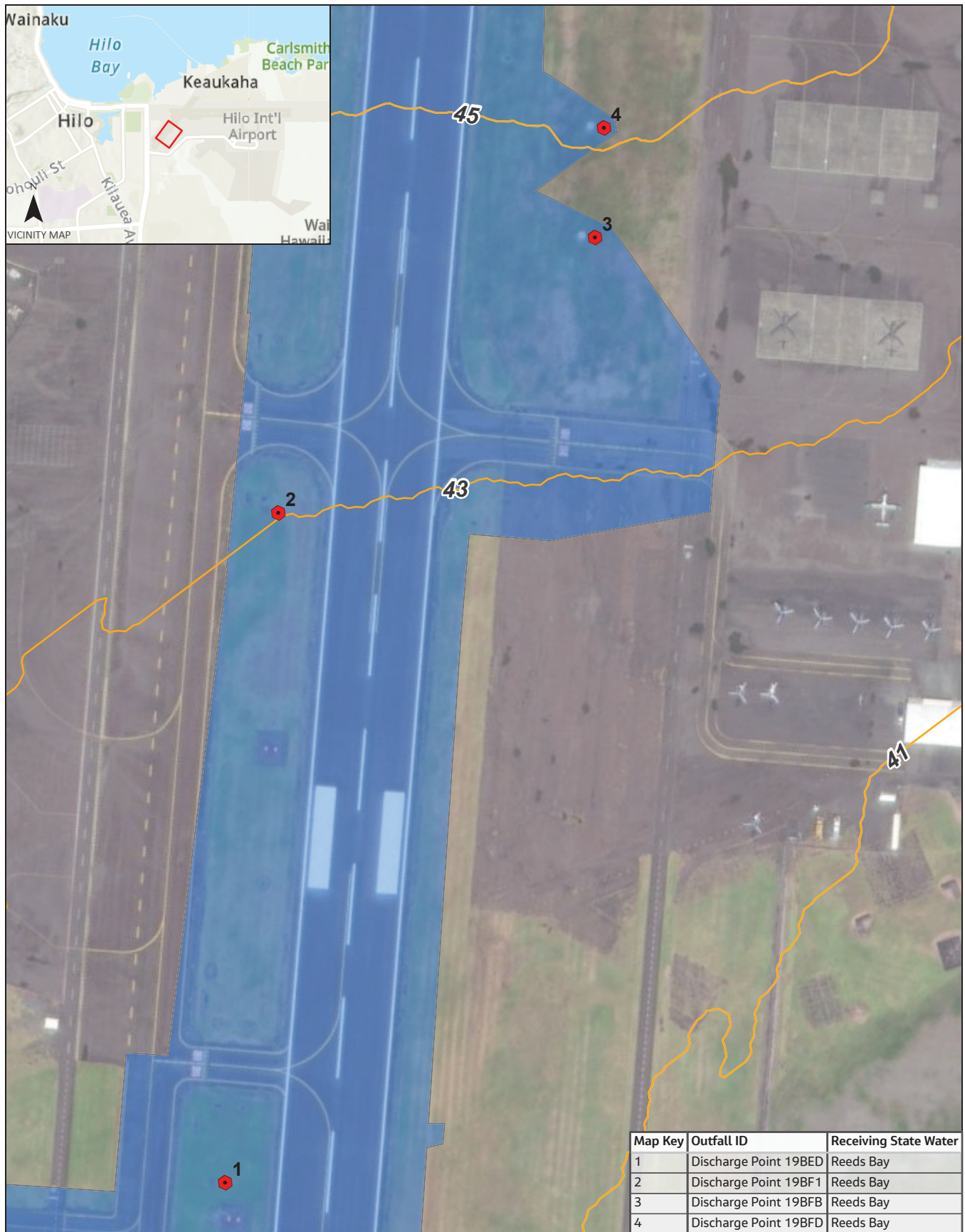
- Flood Zones**
- Base Flood Elevations Determined
 - 100 Year Flood, Coastal, Wave Action, Base Elevation determined

Beyond 500 Year Flood Plain

FIGURE 2
Flood Zones

*Repair of Administrative Spaces
Oahu, Hawaii*





LEGEND

- Discharge Point to State Waters
- Contour Line
- Project Limits

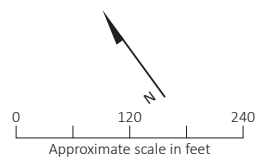
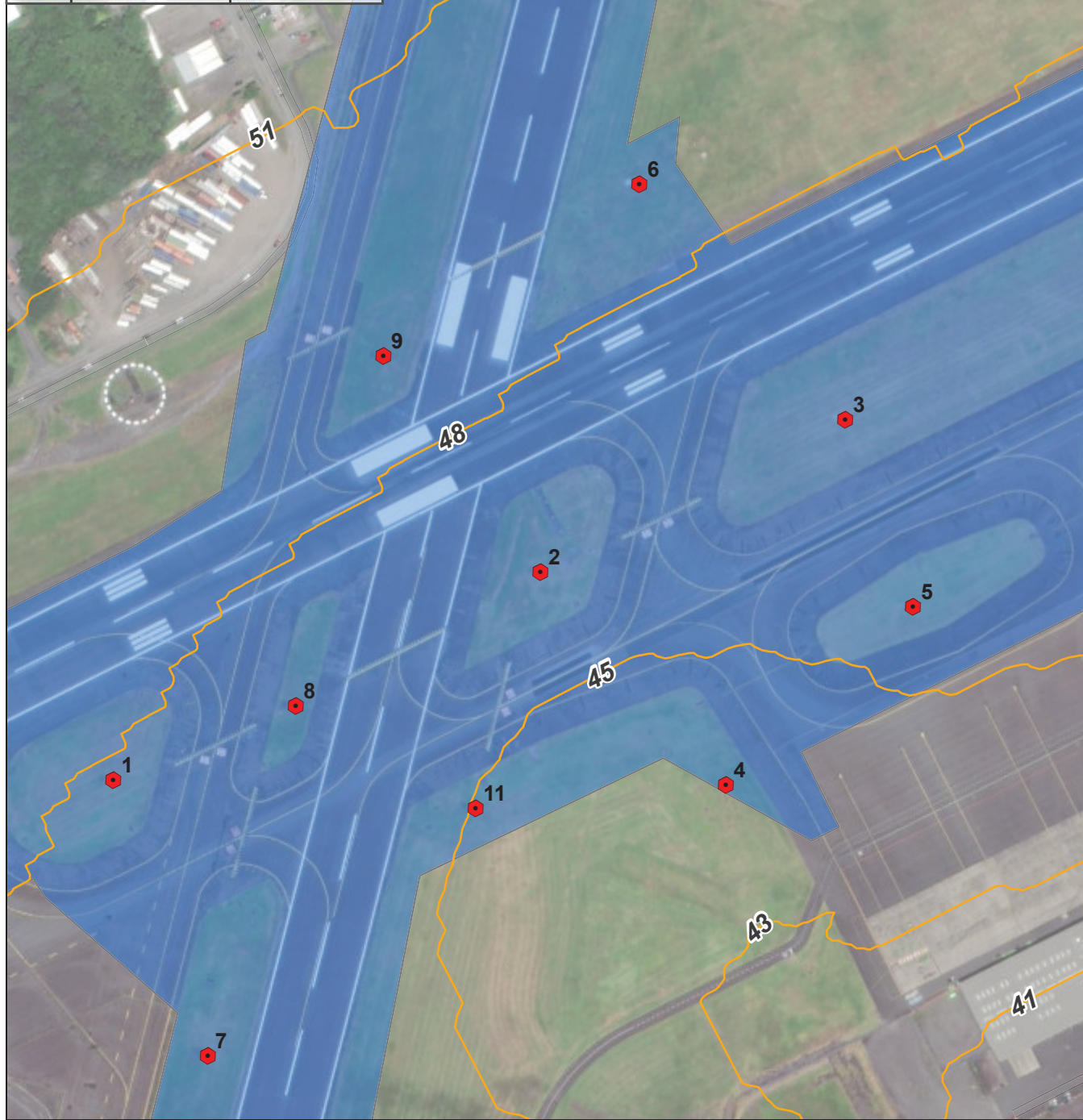


FIGURE 3
Inset Map 1

*Repair of Administrative Spaces
Oahu, Hawaii*

JACOBS

Map Key	Outfall ID	Receiving State Water
1	Discharge Point 19BAE	Reeds Bay
2	Discharge Point 19BB0	Reeds Bay
3	Discharge Point 19BB6	Reeds Bay
4	Discharge Point 19BDA	Reeds Bay
5	Discharge Point 19BDE	Reeds Bay
6	Discharge Point 19BE2	Reeds Bay
7	Discharge Point 19BF3	Reeds Bay
8	Discharge Point 19BF5	Reeds Bay
9	Discharge Point 19BF7	Reeds Bay
10	Discharge Point 19BF9	Reeds Bay
11	Discharge Point 19C01	Reeds Bay



LEGEND

- Discharge Point to State Waters
- Contour Line
- Project Limits

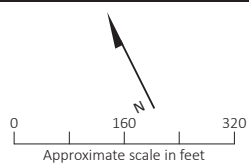
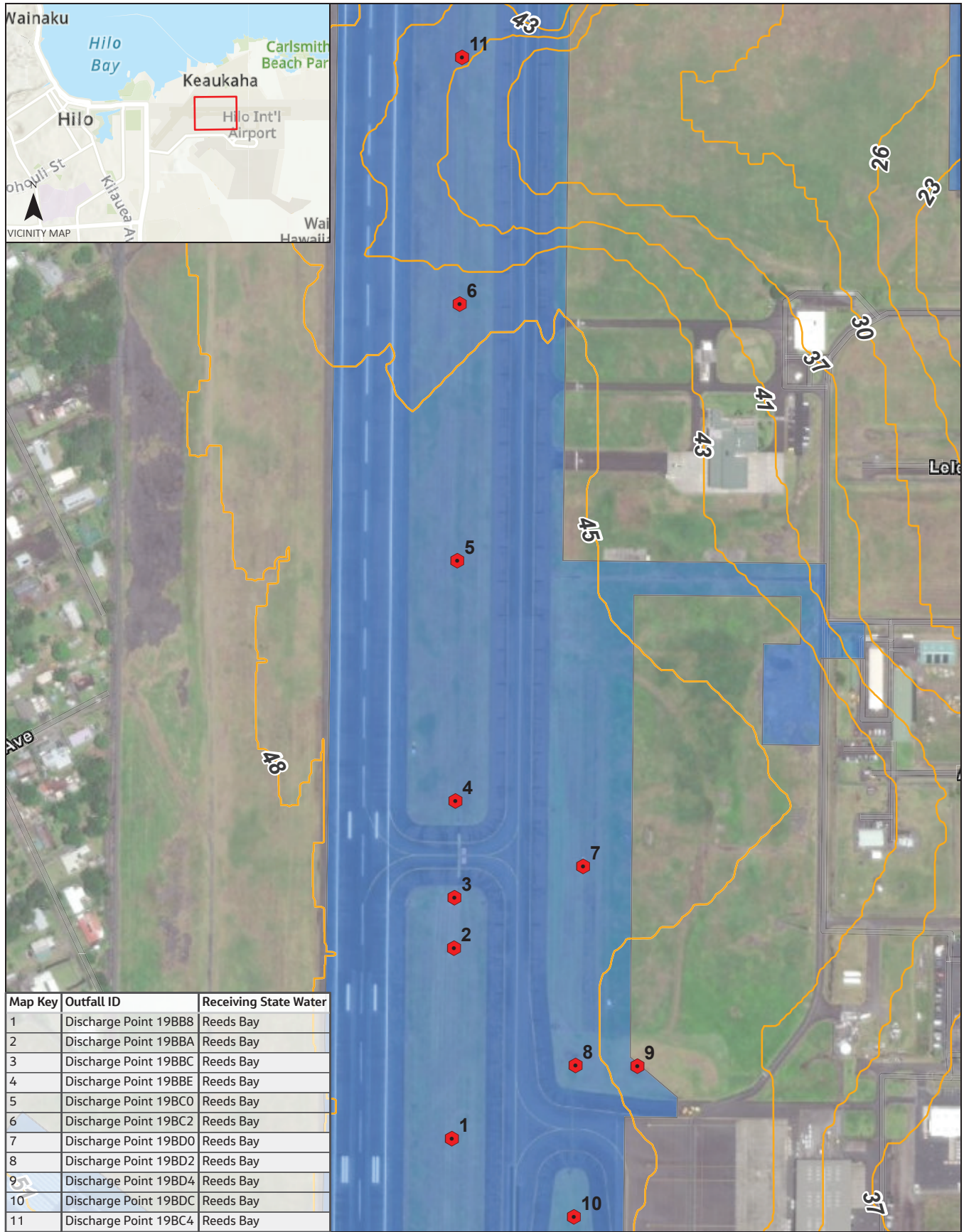





FIGURE 4
Inset Map 2

*Repair of Administrative Spaces
Oahu, Hawaii*

JACOBS



LEGEND

-  Discharge Point to State Waters
-  Contour Line
-  Project Limits



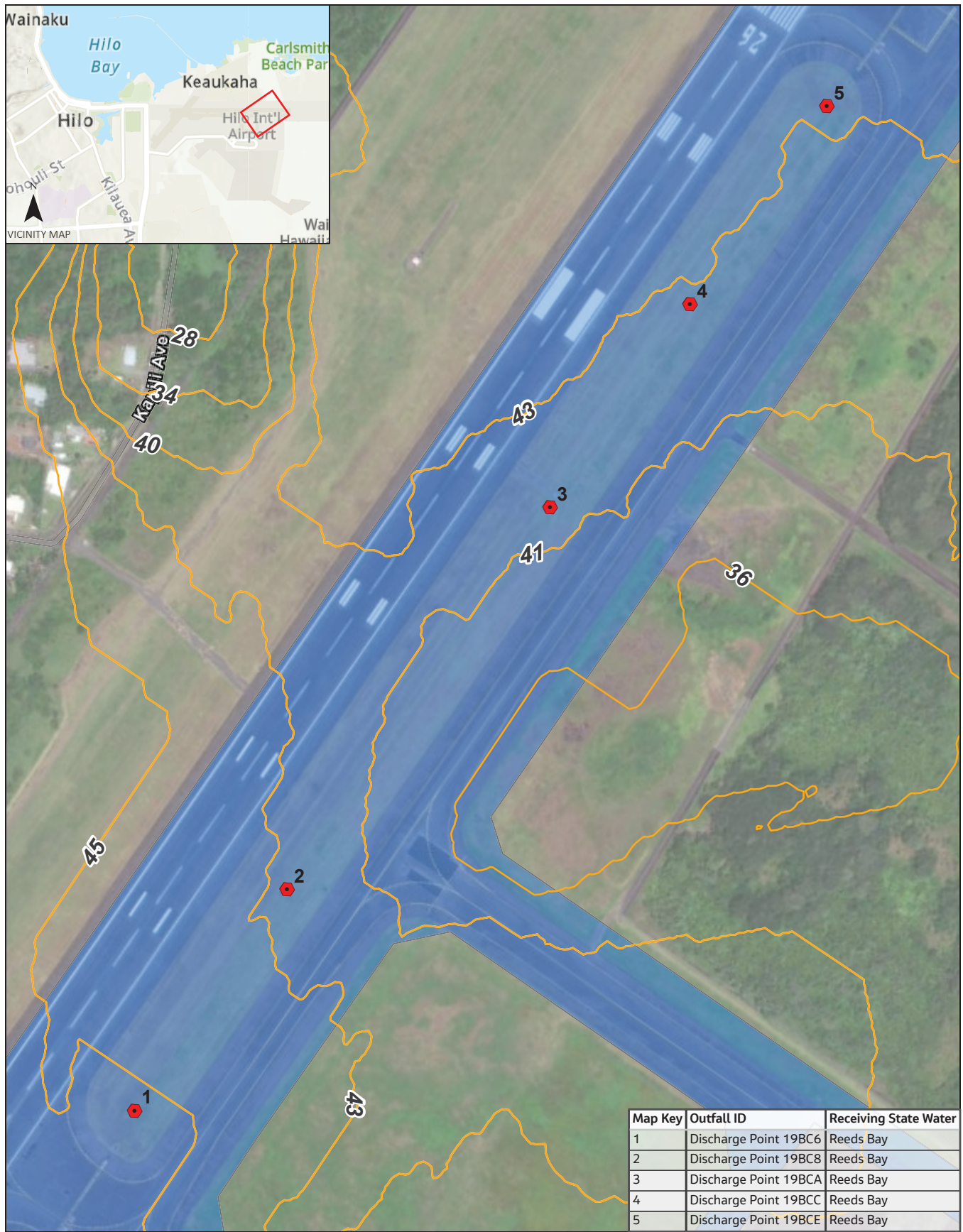
0 230 460
Approximate scale in feet

FIGURE 5

Inset Map 3

*Repair of Administrative Spaces
Oahu, Hawaii*

JACOBS



LEGEND

Discharge Point to State Waters

Contour Line

Project Limits

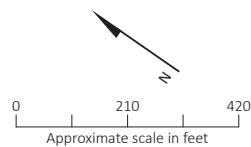


FIGURE 6
Inset Map 4

*Repair of Administrative Spaces
Oahu, Hawaii*

JACOBS

CONTRACTOR SHALL STABILIZE ANY PORTIONS OF UNPAVED HAUL ROUTE AS REQUIRED TO PREVENT DAMAGE OR MUD TRACKING. PLACE, GRADE SMOOTH TO BLEND WITH EXISTING ROAD GRADES, MOISTURE CONDITION, AND COMPACT 3/4" MINUS AGGREGATE SUITABLE FOR GRAVEL ROAD SURFACE AT 4" MINIMUM THICKNESS, AS APPROVED BY THE RPR

ALL SLOPES SHALL BE 0.5% MIN. TO 5% MAX. FILL IN LOW AREAS AND MATCH SURROUNDING TERRAIN, OR AS DIRECTED BY THE RPR

ALL BURIED VEGETATION SHALL BE COVERED BY A MIN. 6" OF CLEAN SOIL, INCLUDING TOPSOIL. REVEGETATE ALL DISTURBED AREAS PER THE SPECIFICATIONS.

EXISTING SURFACE

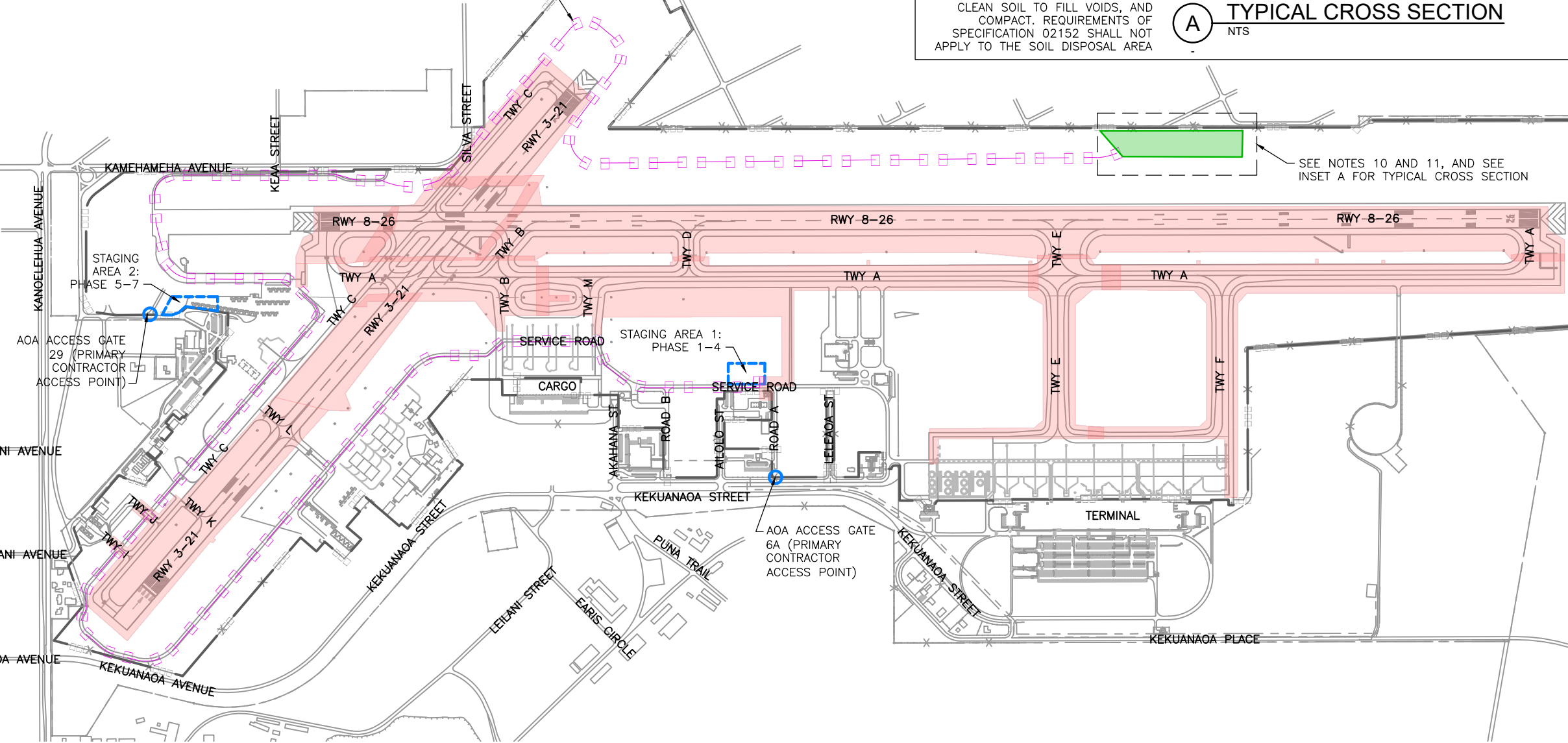
KNOCK DOWN EXISTING VEGETATION, FILL LOW AREAS, COVER WITH CLEAN SOIL TO FILL VOIDS, AND COMPACT. REQUIREMENTS OF SPECIFICATION 02152 SHALL NOT APPLY TO THE SOIL DISPOSAL AREA

A

TYPICAL CROSS SECTION

NTS

SEE NOTES 10 AND 11, AND SEE INSET A FOR TYPICAL CROSS SECTION



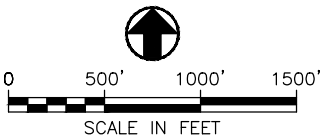
NOTES:

1. THE LIMITS OF THE CONTRACTOR'S STAGING AREAS SHOWN ARE APPROXIMATE. THE EXACT LIMITS SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER. THE TOTAL DISTURBED AREA SHALL NOT EXCEED 1 ACRE FOR EACH AREA.
2. THE CONTRACTOR SHALL SUBMIT A LAYOUT AND BMP PLAN FOR EACH STAGING AREA FOR REVIEW AND APPROVAL BY THE ENGINEER, PRIOR TO MOBILIZATION. EACH PLAN SHALL SHOW PROPOSED LOCATIONS OF FEATURES SUCH AS VEHICLE PARKING AREAS AND STOCKPILES, AND BMPs INCLUDING STABILIZED CONSTRUCTION ENTRANCE, COMPOST FILTER BERMS, CONCRETE WASHOUT, AND ANY OTHER ITEMS NEEDED TO COMPLY WITH REQUIREMENTS OF THE SWPPP AND NPDES PERMIT. SEE SHEET CG001 AND SPECIFICATION SECTION 01561 FOR ADDITIONAL DETAILS.
4. THE CONTRACTOR'S STAGING AREAS ARE WITHIN THE AOA, AND SHALL BE SECURED AT ALL TIMES. ONLY PROPERLY PERMITTED AND MARKED VEHICLES MAY BE PARKED WITHIN THE AOA. PARKING FOR EMPLOYEE/PRIVATE VEHICLES SHALL BE ARRANGED AND PAID FOR BY THE CONTRACTOR OUTSIDE OF THE AOA.
5. THE EXISTING AIRSIDE VEHICLE SERVICE ROAD SHALL BE KEPT UNOBSTRUCTED AND OPERATIONAL AT ALL TIMES.
6. HAZARDOUS MATERIALS ARE NOT ANTICIPATED TO EXIST WITHIN THE STAGING AREAS. HOWEVER, IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED, STOP ALL WORK IN THE AREA AND NOTIFY THE ENGINEER IMMEDIATELY.
7. SEE THE CONSTRUCTION PHASING PLANS FOR CONTRACTOR ACCESS ROUTES BETWEEN THE STAGING AREAS AND WORK AREAS FOR EACH CONSTRUCTION PHASE. SEE ABOVE FOR CONTRACTOR ACCESS ROUTES BETWEEN THE STAGING AREA AND WASTE DISPOSAL AREA.

8. SPOILS FROM TRENCHING AND EXCAVATION WHICH ARE NOT REUSED IN THE BACKFILL SHALL BE STOCKPILED IN THE STAGING AREA OR PLACED IN THE DESIGNATED WASTE SOIL DISPOSAL AREA. STOCKPILES FOR TOPSOIL/ORGANICS AND CLEAN FILL SHALL BE KEPT SEPARATE AND NOT BE COMBINED OR MIXED WITH REMOVED PAVEMENT MATERIALS.
9. ALL REMOVED ASPHALT PAVEMENT, DEMOLISHED STRUCTURAL CONCRETE, OR OTHER WASTE MATERIAL SHALL BE RECYCLED OR DISPOSED OF OFF SITE.
10. CONTRACTOR SHALL KNOCK DOWN ALL EXISTING TREES AND VEGETATION AND FILL WITH WASTE SOIL STARTING ON THE WEST END AND WORKING EASTWARD, EXACT LIMITS IN THE FIELD TO BE APPROVED BY THE RPR. AREA TO BE CLEARED IS APPROXIMATELY 3.2 ACRES BUT MAY CHANGE BASED ON AMOUNT OF SPOILS REMAINING FROM TRENCHING. WORK AT WASTE MATERIAL DISPOSAL AREA SHALL BE DURING DAYLIGHT HOURS, AND THE EXACT TIMES SHALL BE COORDINATED WITH THE ENGINEER AND ITO. THE WASTE MATERIAL DISPOSAL AREA IS WITHIN THE AOA AND SUBJECT TO ALL APPLICABLE ACCESS AND SAFETY REQUIREMENTS. CONTRACTOR VEHICLES AND EQUIPMENT APPROVED BY THE ENGINEER MAY BE PARKED WITHIN THE DISPOSAL AREA WHEN NOT IN USE, PROVIDED THEY ARE PROPERLY MARKED PER THE CSPP, AND APPROPRIATE BMPs INSTALLED AND APPROVED IN THE BMP PLAN.
11. FINISH GRADE THE WASTE SOIL DISPOSAL AREA TO MATCH EXISTING DRAINAGE PATTERNS. CONSTRUCTION STORMWATER BMP'S APPROPRIATE FOR USE ON THE AIRFIELD SHALL BE INSTALLED AND MAINTAINED PER APPROVED SWPPP. ALL DISTURBED AREAS SHALL BE REVEGETATED PER THE SPECIFICATIONS. PERIMETER CONTROLS MUST BE ESTABLISHED DOWNGRADE OF AREAS WITH EXPOSED SOIL UNTIL THE AREAS ARE STABILIZED WITH VEGETATION COVERING AT LEAST 70% OF THE SURFACE AREA.

LEGEND:

- CONTRACTOR STAGING AREAS
- CONTRACTOR ACCESS GATE
- WORK AREA
- WASTE SOIL DISPOSAL AREA
- HAUL ROUTE TO DISPOSAL AREA



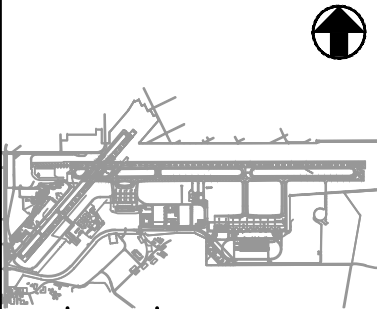
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature expiration date
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

CONTRACTOR STAGING
AND ACCESS PLAN

DATE:

APRIL 19, 2022

SHEET:

OF 102

DWG. NO.

FIGURE 7

EROSION AND SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209 – WATER POLLUTION AND EROSION CONTROL IN THE HAWAII STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION. SECTION 209 DESCRIBES, BUT IS NOT LIMITED TO, SUBMITTAL REQUIREMENTS, SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER, CONSTRUCTION REQUIREMENTS, METHOD OF MEASUREMENT, AND BASIS OF PAYMENT.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL". BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION. EROSION CONTROL MEASURES SHOWN HEREON REPRESENT THE MINIMUM REQUIREMENTS. CONTRACTOR SHALL ADJUST THE EROSION CONTROL MEASURES TO PROVIDE BEST MANAGEMENT PRACTICES TO ADDRESS REQUIREMENTS OF HAR 11–54 AND HAR 11–55 AS NEEDED AND AS CONSTRUCTION PHASING AND SEQUENCING REQUIRES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 56, "SOLID WASTE MANAGEMENT CONTROL". THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIAL, DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING OR BURYING IS PROHIBITED.

4. THE OWNER HAS OBTAINED A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMIT AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) DRAFTED FOR THE PROJECT.

THE CONTRACTOR SHALL REVISE AND UPDATE THE SWPPP, AS NEEDED, TO COMPLETE REQUIRED PROJECT SPECIFIC INFORMATION. NO UPDATES SHALL REMOVE REQUIREMENTS ALREADY ESTABLISHED IN THE PLAN. UPDATES SHALL INCLUDE, BUT IS NOT LIMITED TO, SUBMITTING THE NAME OF SPECIFIC INDIVIDUAL(S) DESIGNATED RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS.

5. THE CONTRACTOR SHALL OBTAIN SEPARATE NPDES PERMIT(S) FOR THE FOLLOWING ACTIVITIES, IF NEEDED.

a. CONSTRUCTION DEWATERING

b. HYDROTESTING WATERS

c. ADDITIONAL CONSTRUCTION STAGING AND STORAGE AREA(S) USED SOLELY FOR THE PROJECT THAT ARE NOT INCLUDED IN THE CURRENT NPDES PERMIT.

6. WITHIN 30 DAYS OF NOTICE TO PROCEED, CONTRACTOR SHALL SUBMIT THEIR SITE–SPECIFIC BEST MANAGEMENT PRACTICE PLAN (SSBMP) TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE DOTA’S CONSTRUCTION ACTIVITIES BMP FIELD MANUAL, DATED AUGUST 2019, IN DEVELOPING, INSTALLING, AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT.

THE MEASURES, PRACTICES AND PROCEDURES AS IDENTIFIED IN THE SSBMP MAY BE REVISED BY THE CONTRACTOR TO CONFORM TO THEIR OPERATIONS. HOWEVER, ANY REVISION TO THE SSBMP SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR’S SSBMP SHALL BE KEPT AVAILABLE ON SITE.

7. PRIOR TO CLEARING LAND FOR GRADING OR DEMOLITION WORK, TEMPORARY EROSION CONTROL MEASURES AS REFLECTED ON THE SSBMP SHALL BE INSTALLED. ONLY AREAS REQUIRED FOR THE INSTALLATION OF THE MEASURES SHALL BE DISTURBED. UPON COMPLETION OF THE INSTALLATION OF THE INITIAL BMP MEASURES, THE CONTRACTOR SHALL REQUEST AN INSPECTION OF THE MEASURES FROM THE ENGINEER. ANY AND ALL DEFICIENCIES OBSERVED DURING THIS INSPECTION SHALL BE CORRECTED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER BEFORE CONSTRUCTION WORK IS ALLOWED TO PROCEED.

8. THE CONTRACTOR SHALL PERFORM AND RECORD BMP INSPECTIONS WEEKLY AND AFTER RAIN EVENTS GREATER THAN 0.25 INCHES WITHIN A 24 HOUR PERIOD. THE BMP INSPECTION REPORTS SHALL BE KEPT AVAILABLE ON SITE. A COPY OF THE BMP INSPECTION REPORT SHALL BE SUBMITTED TO THE ENGINEER NO LATER THAN ONE WEEK FROM THE DATE OF THE INSPECTION.

9. THE CONTRACTOR SHALL INSTALL A RAIN GAGE PRIOR TO ANY FIELD WORK INCLUDING THE INSTALLATION OF ANY BMP. THE RAIN GAGE SHALL HAVE A TOLERANCE OF AT LEAST 0.05 INCHES OF RAINFALL AND HAVE AN OPENING OF AT LEAST ONE INCH IN DIAMETER. INSTALL THE RAIN GAGE ON THE PROJECT SITE IN AN AREA THAT WILL NOT DETER RAINFALL FROM ENTERING THE GAGE OPENING. THE RAIN GAGE INSTALLATION SHALL BE STABLE AND PLUMBED.

10. ALL BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER. IF REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS AFTER THE INSPECTION AND SHALL BE COMPLETED PRIOR TO THE NEXT ANTICIPATED RAINFALL EVENT.

11. THE CONTRACTOR SHALL SEQUENCE WORK TO MINIMIZE THE AMOUNT OF LAND TO BE EXPOSED AT ANY ONE TIME. LIMIT MAXIMUM SURFACE AREA OF EARTH MATERIAL EXPOSED AT ANY ONE TIME TO 300,000 SQUARE FEET.

12. VEHICLE TRACKING CONTROLS SHALL BE ESTABLISHED AS SHOWN IN THE PLANS, PRIOR TO GRADING AND DEMOLITION OPERATIONS.

13. THE CONTRACTOR SHALL APPLY TEMPORARY SOIL STABILIZATION IMMEDIATELY ON ALL AREAS OF EXPOSED SOILS THAT ARE NOT AT FINAL GRADE AND ARE EXPECTED TO BE EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS. TEMPORARY SOIL STABILIZATION SHALL BE IN THE FORM OF GEOTEXTILE FABRIC, POLYMER EMULSION STABILIZER, OR OTHER APPROVED METHOD THAT WILL NOT ATTRACT BIRDS OR OTHER WILDLIFE.

14. UPON ACHIEVING FINAL GRADES, ALL UNPAVED AREAS WITHIN THE GRADING LIMITS SHALL RECEIVE PERMANENT SOIL STABILIZATION THROUGH GRASS PLUGS OR OTHER APPROVED METHOD THAT WILL NOT ATTRACT BIRDS OR OTHER WILDLIFE, WHICH SHALL BE APPLIED WITHIN SEVEN (7) CALENDAR DAYS AFTER COMPLETION OF GRADING OR ONE (1) CALENDAR DAY BEFORE AN ANTICIPATED RAINFALL EVENT. RE–ESTABLISH TOPSOIL AND GRASS PER SPECIFICATION SECTION 02905.
15. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM THIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
16. THE DOTA’S THIRD PARTY ENVIRONMENTAL INSPECTORS WILL PERFORM ROUTINE MONTHLY SITE INSPECTIONS OF THE CONTRACTOR’S BMP MEASURES. ALL DEFICIENCIES OBSERVED DURING THESE INSPECTIONS MUST BE ADDRESSED AND CORRECTED BY THE CONTRACTOR WITHIN THE TIMELINE PRESCRIBED BY THE INSPECTOR. DOCUMENTATION OF THE CORRECTIVE ACTIONS MUST BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER FOR ACCEPTANCE.
17. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN–PLACE AND ESTABLISHED. THE CONTRACTOR SHALL REQUEST A FINAL INSPECTION FROM THE ENGINEER OF THE PERMANENT EROSION CONTROLS. ALL DEFICIENCIES OBSERVED DURING THIS INSPECTION MUST BE ADDRESSED AND CORRECTED BEFORE THE CONTRACTOR CAN REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND CLOSE THE SITE.
18. THE ENGINEER MAY ASSESS THE CONTRACTOR LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON–COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209, FOR EVERY DAY OF NON–COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
19. THE ENGINEER WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATION RECEIVED BY THE DEPARTMENT FOR NON–COMPLIANCE OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE.
20. THE CONTRACTOR WILL ABIDE TO ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS INCLUDING THE DOT–AIRPORTS ENVIRONMENTAL POLICY, HNL STORMWATER MANAGEMENT PROGRAM PLAN, ENVIRONMENTAL MANAGEMENT SYSTEM AND CONSTRUCTION SITE RUNOFF CONTROL PROGRAM FOUND AT: <http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>
21. PERSONNEL SELECTED BY THE CONTRACTOR AND RESPONSIBLE FOR THE BMP INSPECTION AND MAINTENANCE SHALL RECEIVE TRAINING FROM THE CONTRACTOR AND THEIR TRAINING DOCUMENTED IN THE SSBMP. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE BMP MEASURES USED ON SITE IN GOOD WORKING ORDER.

DOTA REQUIRES THAT STAFF WITH CONSTRUCTION PROGRAM RESPONSIBILITIES (E.G. SPMs, CMs, CONTRACTORS, INSPECTORS, PLAN REVIEWERS) TO BE TRAINED ANNUALLY. THE TRAINING IS SPECIFIC TO DOTA ACTIVITIES, INCLUDING THE PROPER INSTALLATION AND MAINTENANCE OF ACCEPTED BMPs, RULES, AND PROCEDURES.

THE PERTINENT TRAINING VIDEO IS AVAILABLE ON THE DOTA WEBSITE: <http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

RECORD COMPLETION OF THE TRAINING AND RETAIN RECORDS ON SITE. WITH GROUND DISTURBING ACTIVITIES ABOUT TO COMMENCE, THE TRAINING RECORD SHOULD BE UP TO DATE. ALSO SUBMIT COMPLETED TRAINING ROSTERS AND CONSTRUCTION TRAINING QUIZZES TO THE DOTA ENVIRONMENTAL SECTION (FAX: 808–838–8017) OR EMAIL TO (dot.air.environmental@hawaii.gov).

CONTRACTOR ACCESS ROUTE BMP NOTES:

1. FOR ANY AREAS WHERE FOREIGN OBJECT DEBRIS (FOD) DUE TO CONTRACTOR VEHICLE TRACKING CANNOT BE CONTROLLED TO THE SATISFACTION OF THE ENGINEER AND ITO BY CONTINUOUS SWEEPING, CONTRACTOR SHALL STABILIZE ACCESS ROUTES AS NEEDED, USING CONSTRUCTION MATS (INSTALLED PER MANUFACTURER’S RECOMMENDATIONS) OR OTHER APPROVED STABILIZATION METHOD, THAT WILL NOT INTRODUCE FOD ON OR NEAR ACTIVE AIRCRAFT MOVEMENT AREAS.
2. ACCESS ROUTES SHALL FOLLOW EXISTING GRADES TO THE MAXIMUM EXTENT POSSIBLE AND SHALL NOT EXCEED A SLOPE OF 15%.



Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature expiration date of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:

NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:












EROSION CONTROL
NOTES

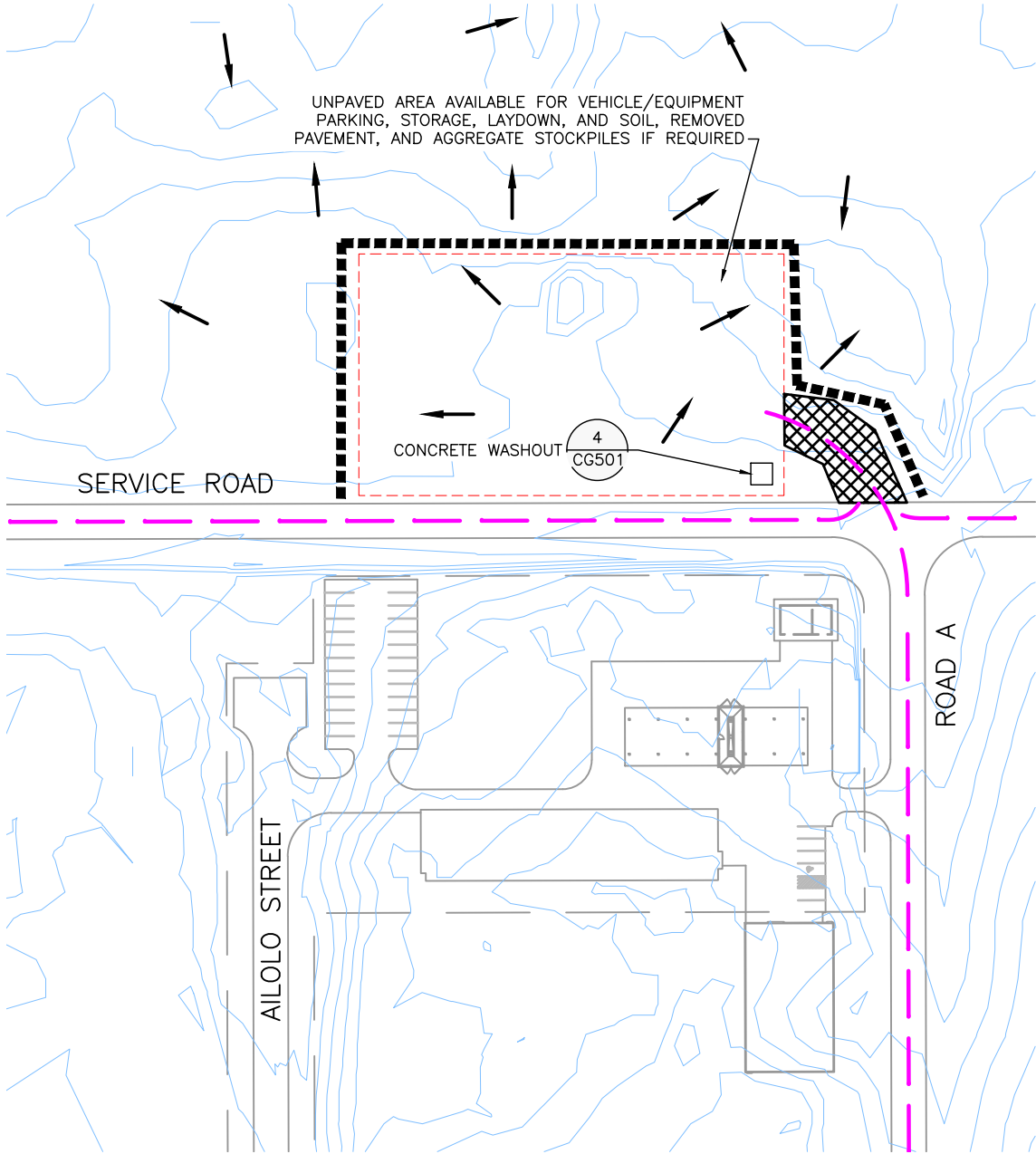
DATE:	DWG. NO. FIGURE 8
APRIL 19, 2022	
SHEET:	
2 OF 102	

NOTES:

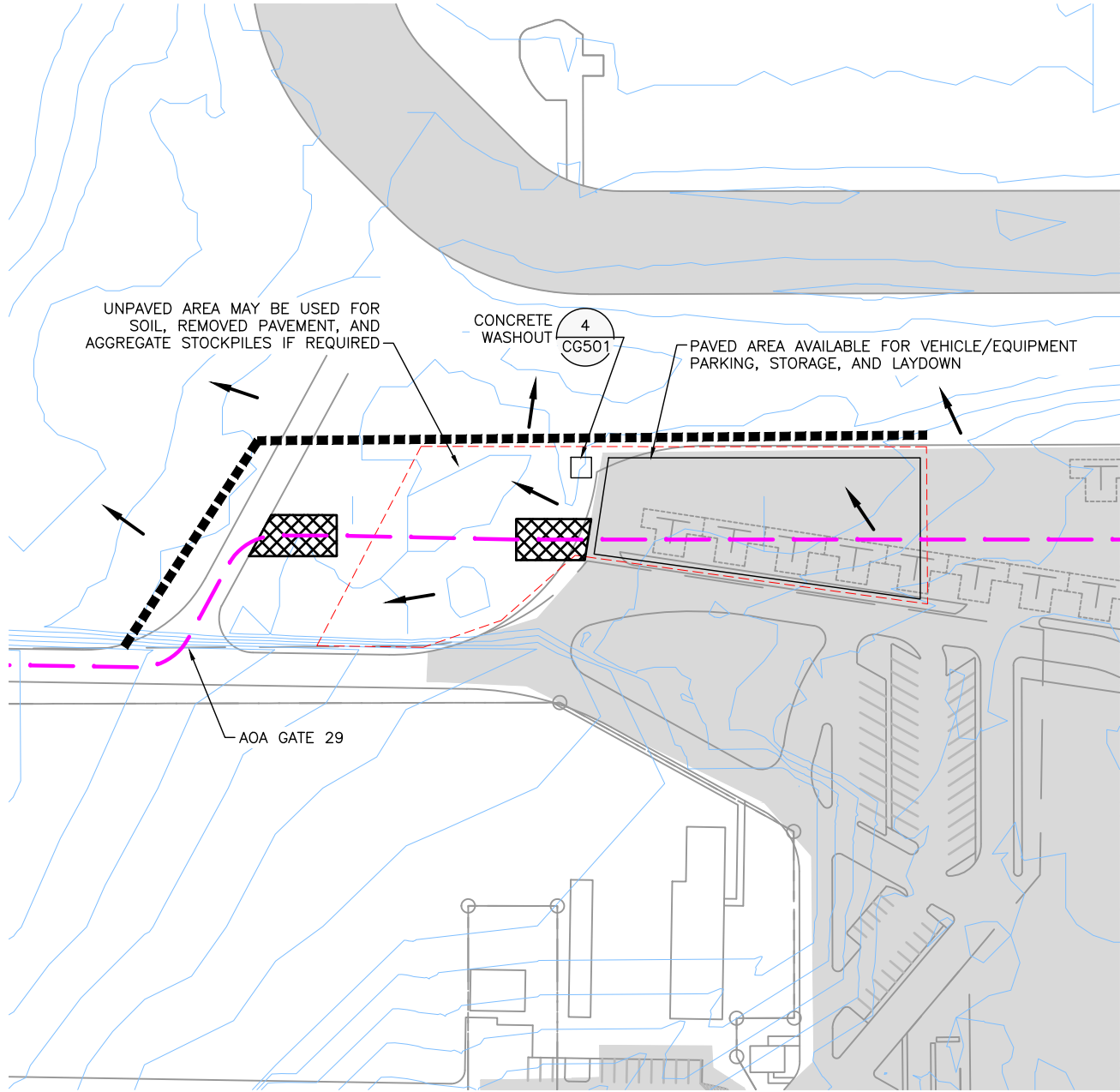
- 1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.
- 2. LOCATIONS OF FEATURES WITHIN STAGING AREA LIMITS ARE CONCEPTUAL. CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR EACH STAGING AREA, INCLUDING ALL PROPOSED BMPS, TO THE RPR FOR APPROVAL PRIOR TO MOBILIZATION.

LEGEND:

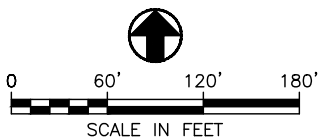
-  INLET PROTECTION 
-  COMPOST FILTER BERM 
-  STABILIZED CONSTRUCTION ENTRANCE 
-  PHASE WORK AREA (NOT DISTURBED AREA)
-  CONTRACTOR HAUL/ACCESS ROUTES
-  EXISTING 1 FOOT CONTOURS
-  SURFACE FLOW DIRECTION
-  PROPOSED AIRFIELD LIGHTING AND CONDUIT



STAGING AREA 1 - PHASES 1-4



STAGING AREA 2 - PHASES 5-



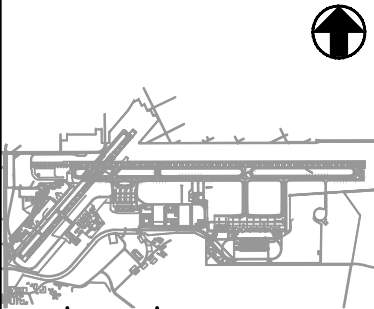
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____ of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- STAGING AREAS

DATE:

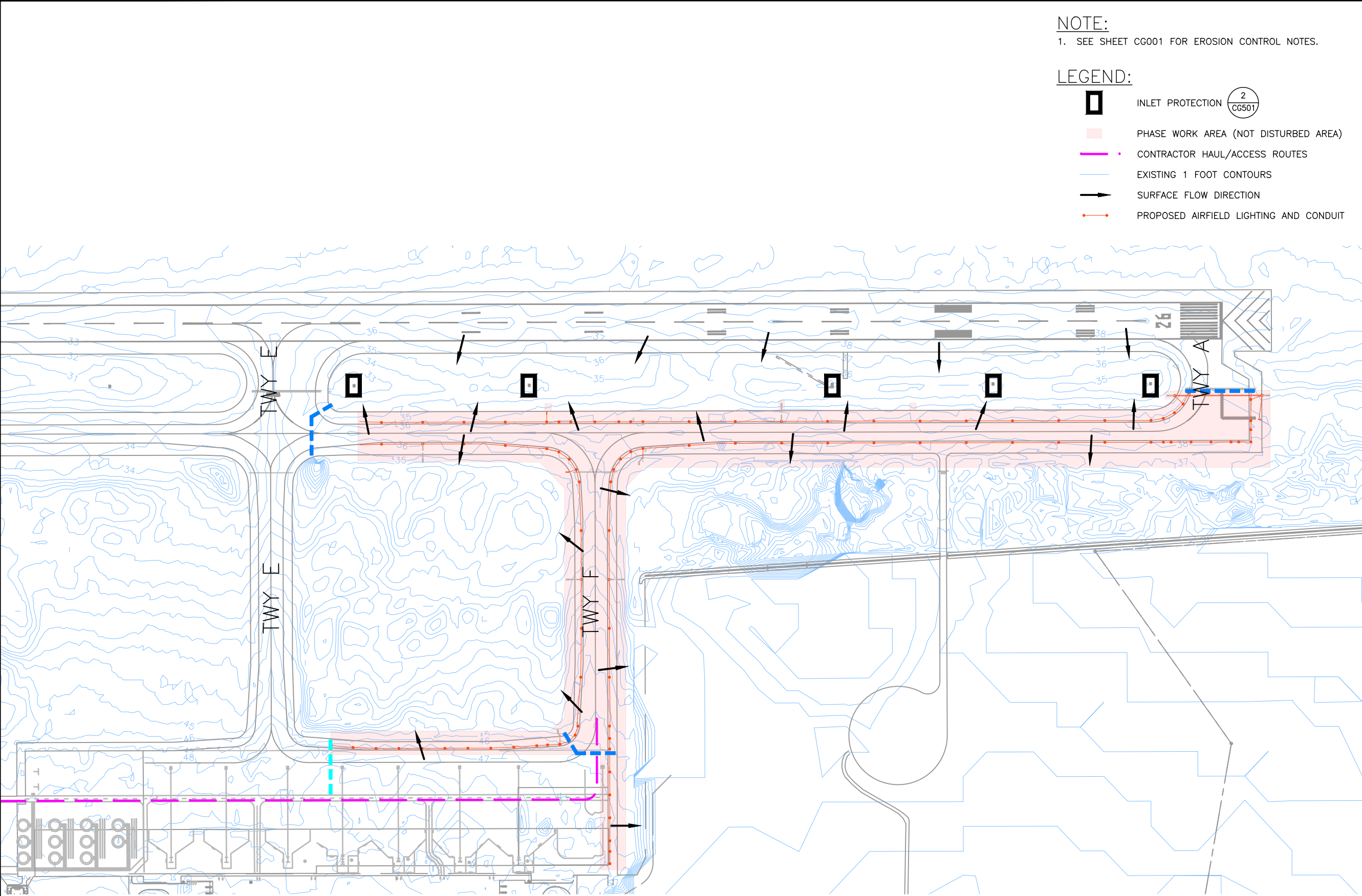
APRIL 19, 2022

SHEET:

29 OF 102

DWG. NO.

FIGURE 9



NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
- INLET PROTECTION (CG501)
 - PHASE WORK AREA (NOT DISTURBED AREA)
 - CONTRACTOR HAUL/ACCESS ROUTES
 - EXISTING 1 FOOT CONTOURS
 - SURFACE FLOW DIRECTION
 - PROPOSED AIRFIELD LIGHTING AND CONDUIT



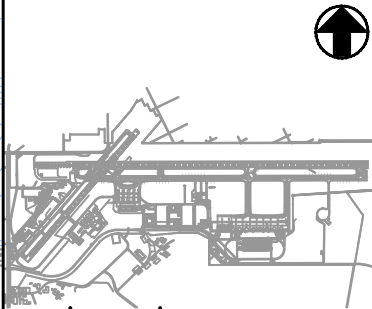
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature expiration date of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- PHASE 1

DATE:

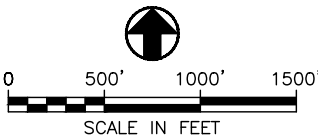
APRIL 19, 2022

SHEET:

30 OF 102

DWG. NO.

FIGURE 10



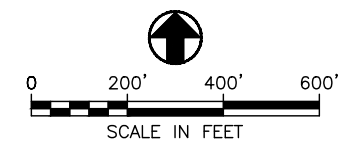
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

D

PHASE WORK AREA (NOT DISTURBED AREA)

EXISTING 1 FOOT CONTOURS

PROPOSED AIRFIELD LIGHTING AND CONDUIT



signature	expiration date of the license
-----------	-----------------------------------

KEY PLAN / NOTES:

100% FINAL SUBMITTAL

PROJECT TITLE:

AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

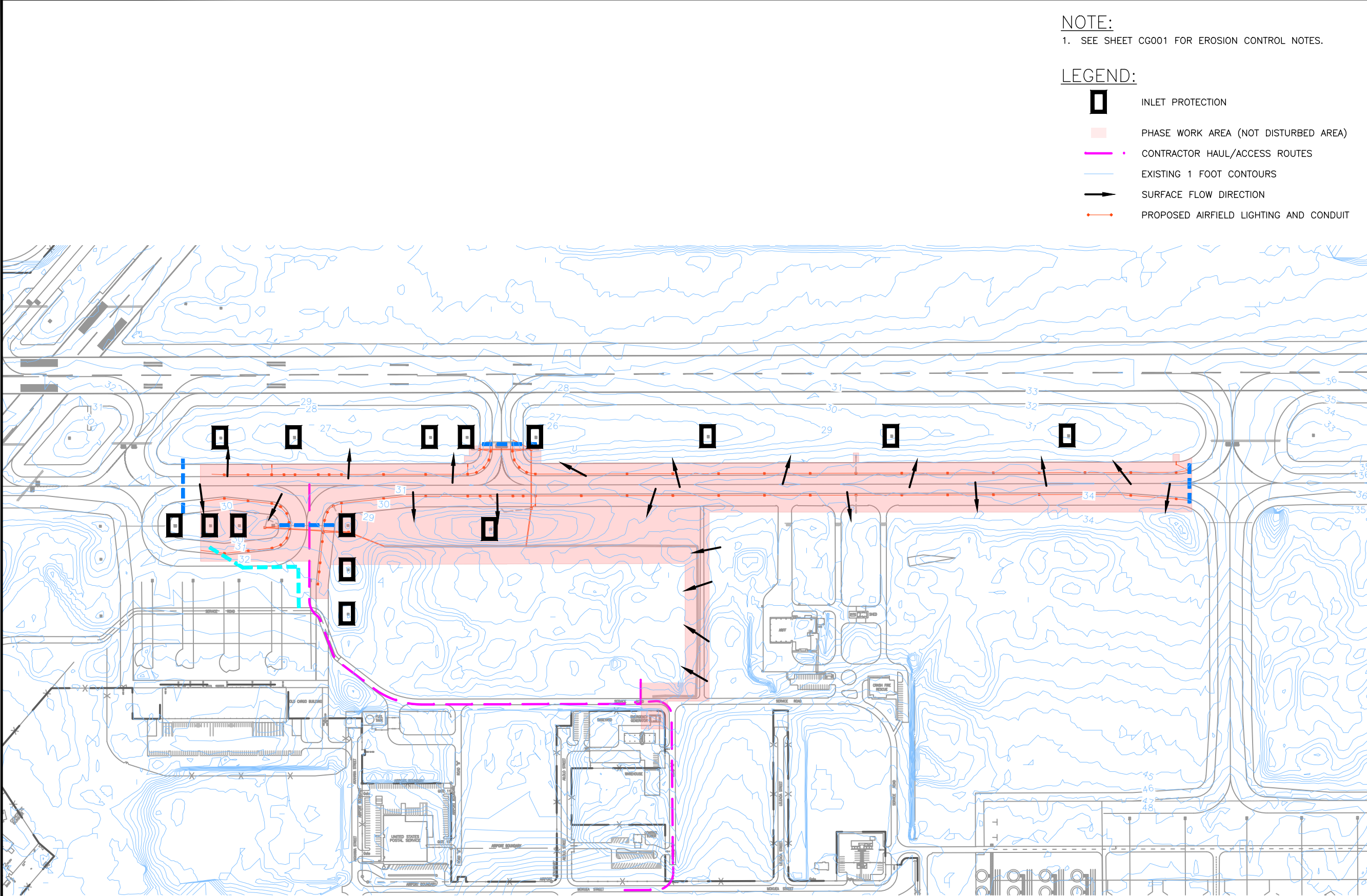
PROJECT NO.:

AH1021-19

SHEET TITLE:

DATE:	DWG. NO.
APRIL 19, 2022	
SHEET:	
31 OF 102	

FIGURE 11



NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
- INLET PROTECTION
 - PHASE WORK AREA (NOT DISTURBED AREA)
 - CONTRACTOR HAUL/ACCESS ROUTES
 - EXISTING 1 FOOT CONTOURS
 - SURFACE FLOW DIRECTION
 - PROPOSED AIRFIELD LIGHTING AND CONDUIT



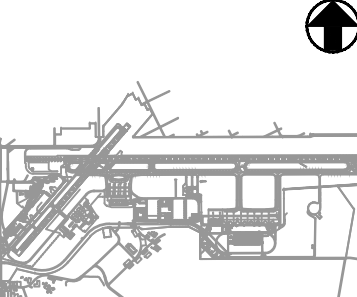
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

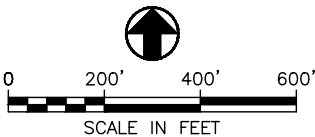
PROJECT NO.:

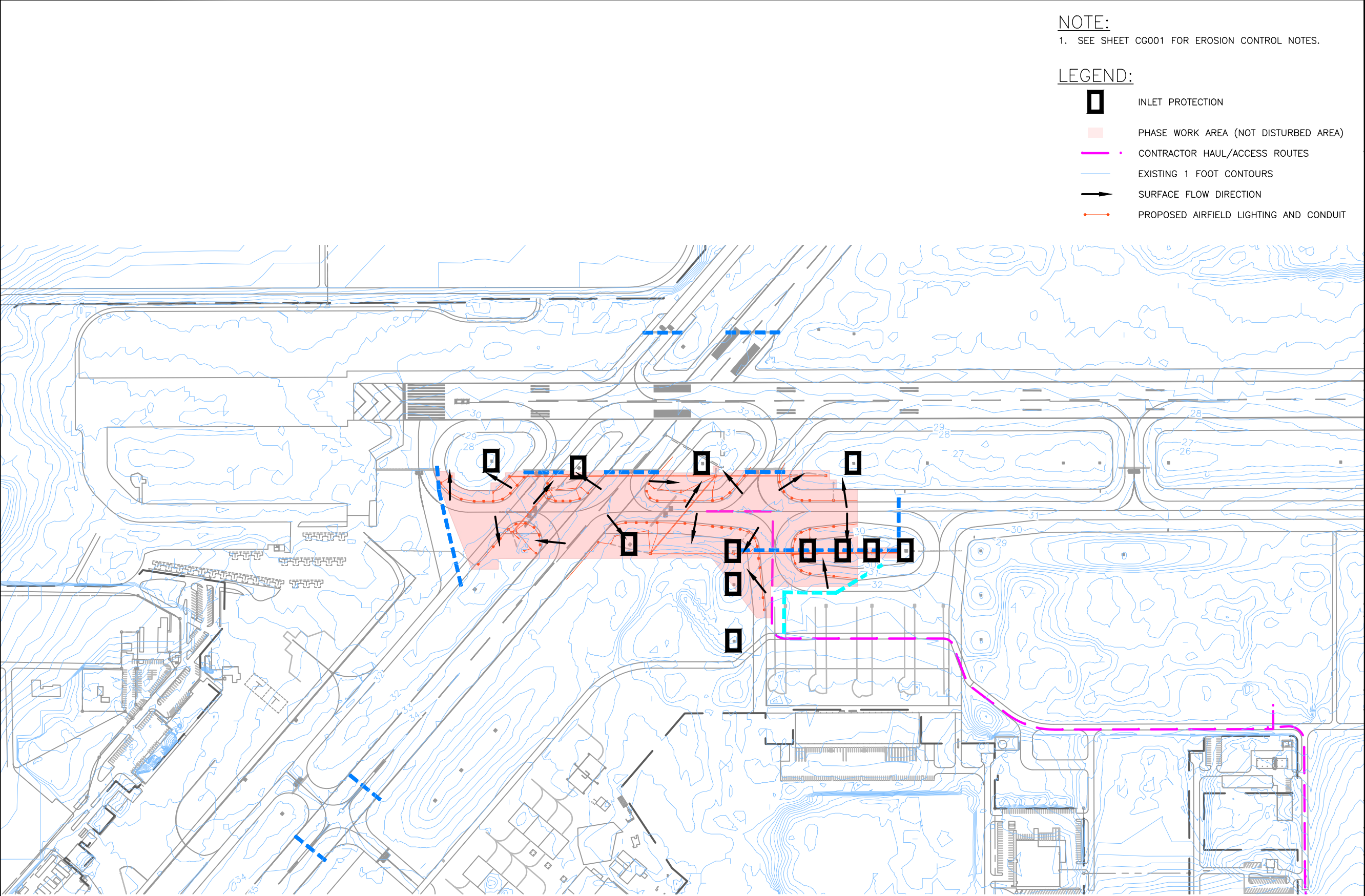
AH1021-19

SHEET TITLE:







EROSION CONTROL PLAN
- PHASE 2B

DATE:	DWG. NO.
APRIL 19, 2022	
SHEET:	FIGURE 12
32 OF 102	





NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
-  INLET PROTECTION
 -  PHASE WORK AREA (NOT DISTURBED AREA)
 -  CONTRACTOR HAUL/ACCESS ROUTES
 -  EXISTING 1 FOOT CONTOURS
 -  SURFACE FLOW DIRECTION
 -  PROPOSED AIRFIELD LIGHTING AND CONDUIT



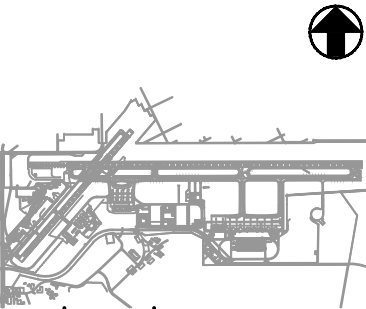
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

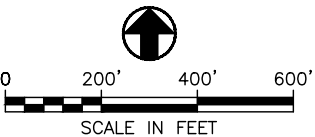
PROJECT NO.:

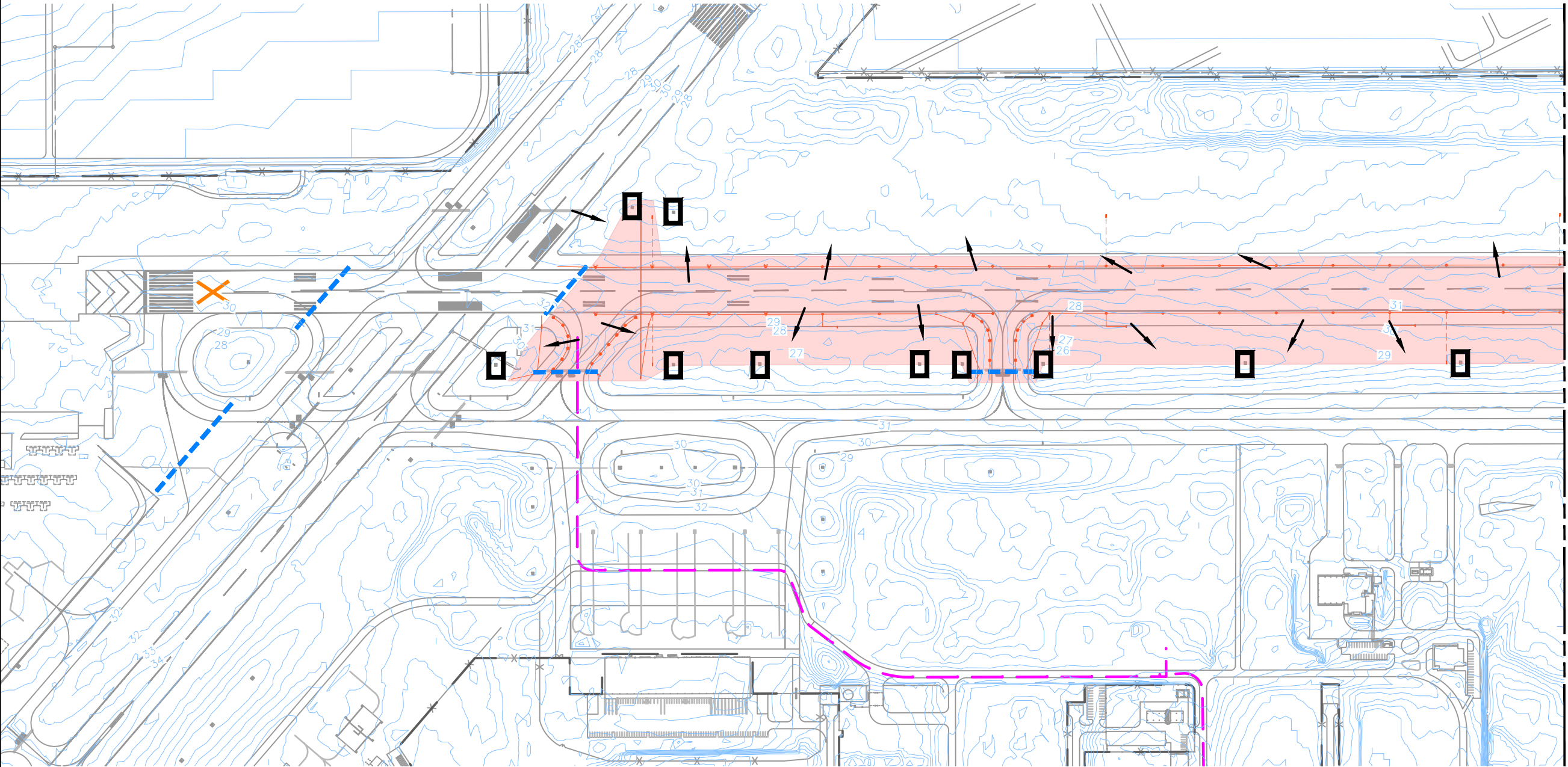
AH1021-19

SHEET TITLE:







EROSION CONTROL PLAN
- PHASE 3

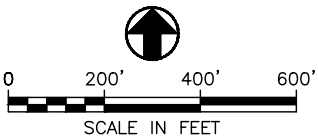
DATE:	DWG. NO.
APRIL 19, 2022	FIGURE 13
SHEET:	
33 OF 102	





NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
-  INLET PROTECTION
 -  PHASE WORK AREA (NOT DISTURBED AREA)
 -  CONTRACTOR HAUL/ACCESS ROUTES
 -  EXISTING 1 FOOT CONTOURS
 -  SURFACE FLOW DIRECTION
 -  PROPOSED AIRFIELD LIGHTING AND CONDUIT



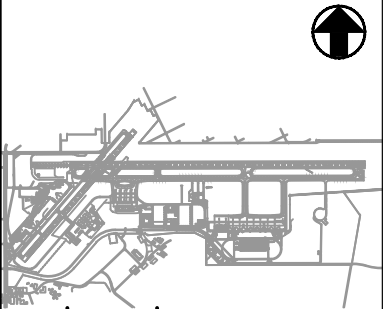
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- PHASE 4

DATE:

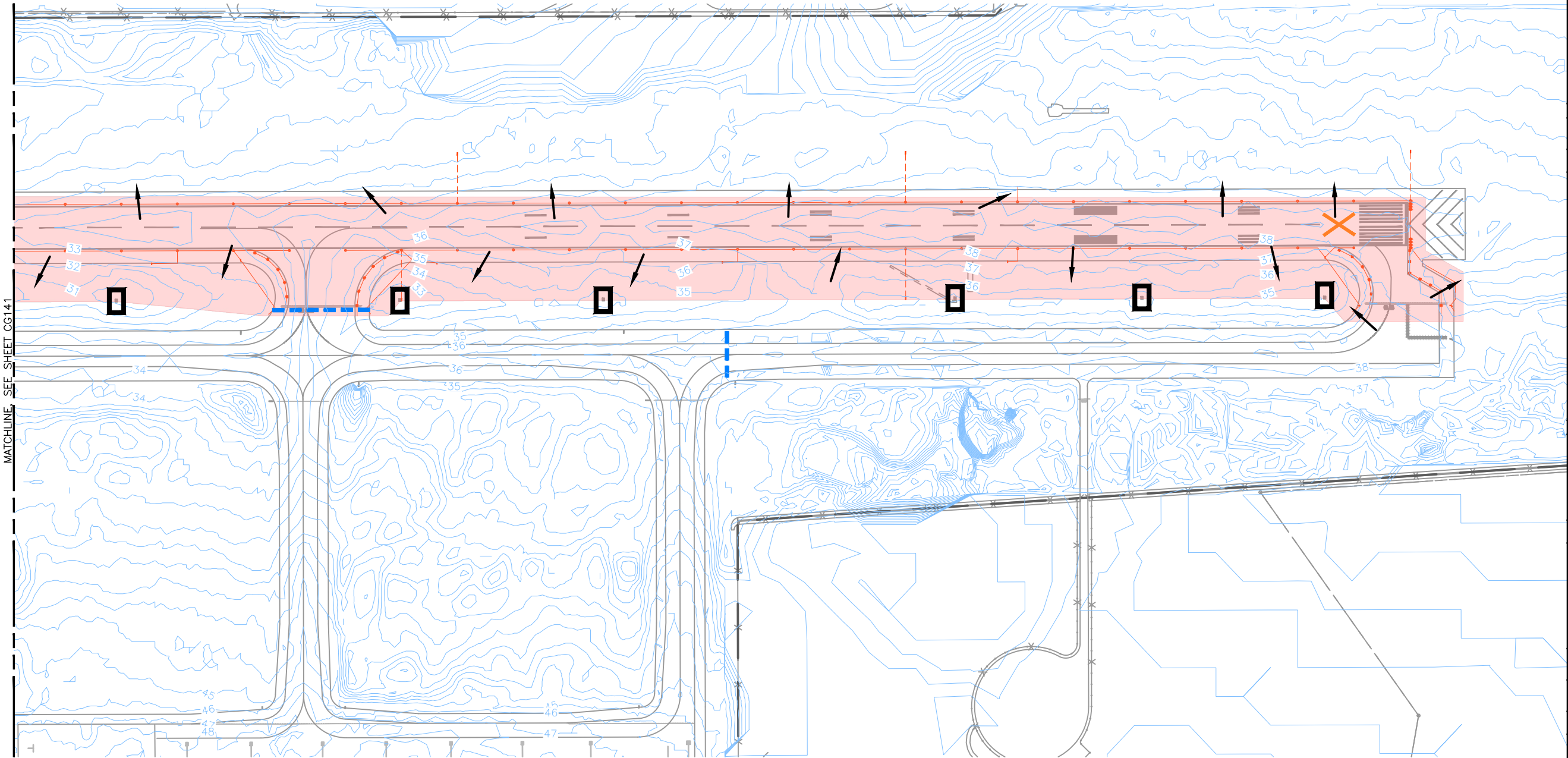
APRIL 19, 2022

SHEET:

34 OF 102

DWG. NO.

FIGURE 14



NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
- INLET PROTECTION
 - PHASE WORK AREA (NOT DISTURBED AREA)
 - CONTRACTOR HAUL/ACCESS ROUTES
 - EXISTING 1 FOOT CONTOURS
 - SURFACE FLOW DIRECTION
 - PROPOSED AIRFIELD LIGHTING AND CONDUIT



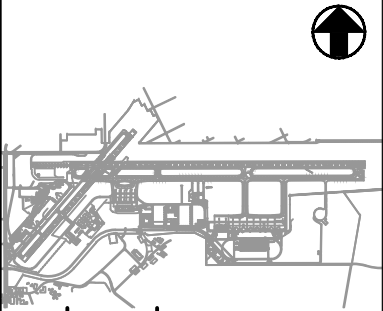
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____ of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- PHASE 4

DATE:

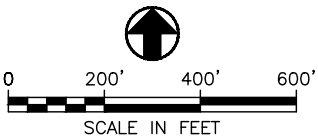
APRIL 19, 2022

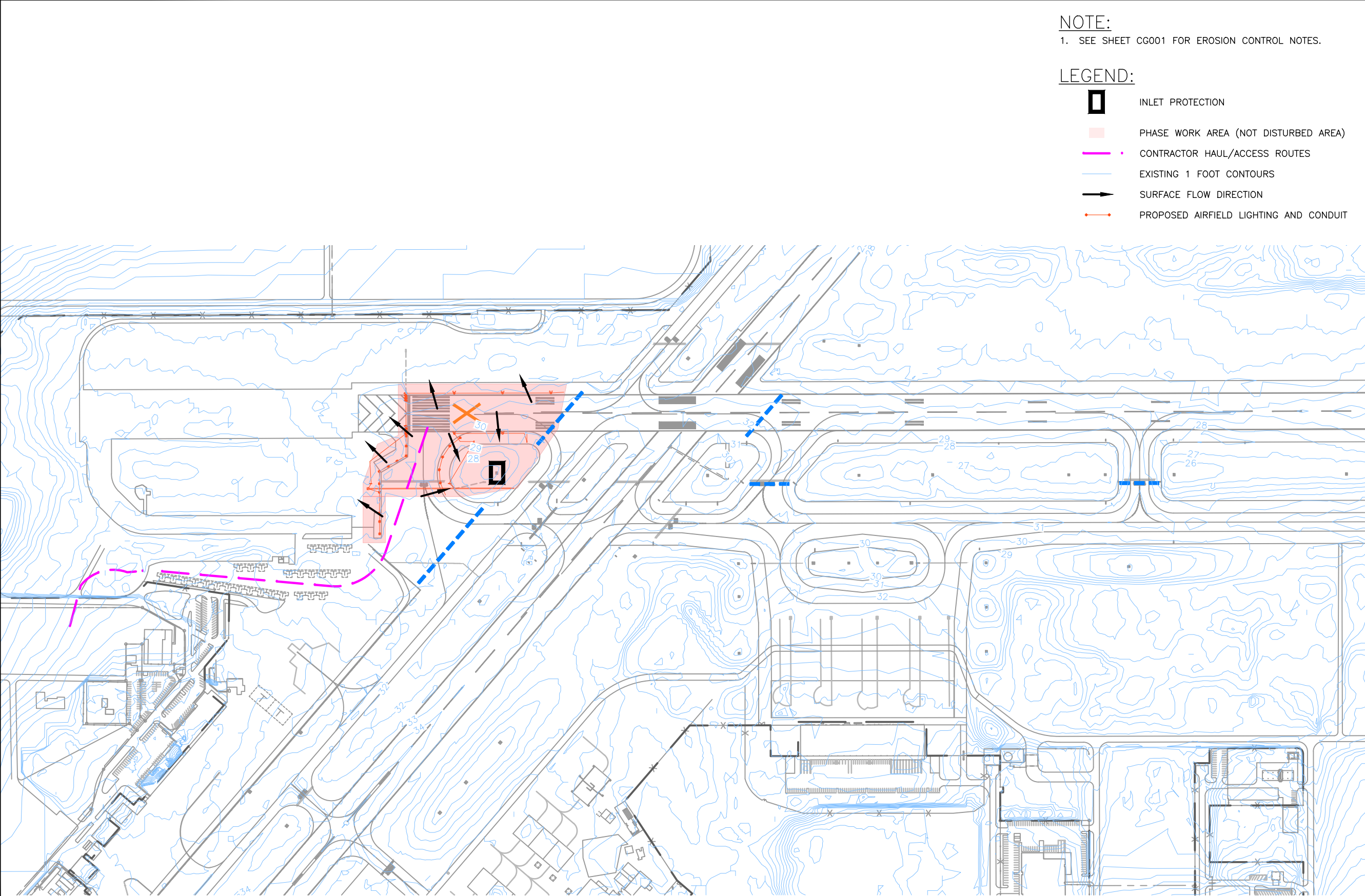
SHEET:

35 OF 102







DWG. NO.

FIGURE 15





NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
-  INLET PROTECTION
 -  PHASE WORK AREA (NOT DISTURBED AREA)
 -  CONTRACTOR HAUL/ACCESS ROUTES
 -  EXISTING 1 FOOT CONTOURS
 -  SURFACE FLOW DIRECTION
 -  PROPOSED AIRFIELD LIGHTING AND CONDUIT



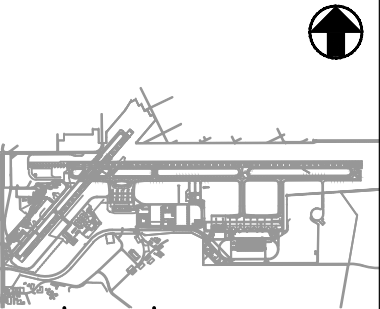
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

**TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT**
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

**EROSION CONTROL PLAN
- PHASE 5**

DATE:

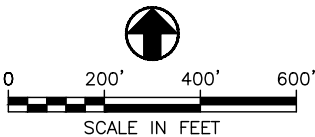
APRIL 19, 2022

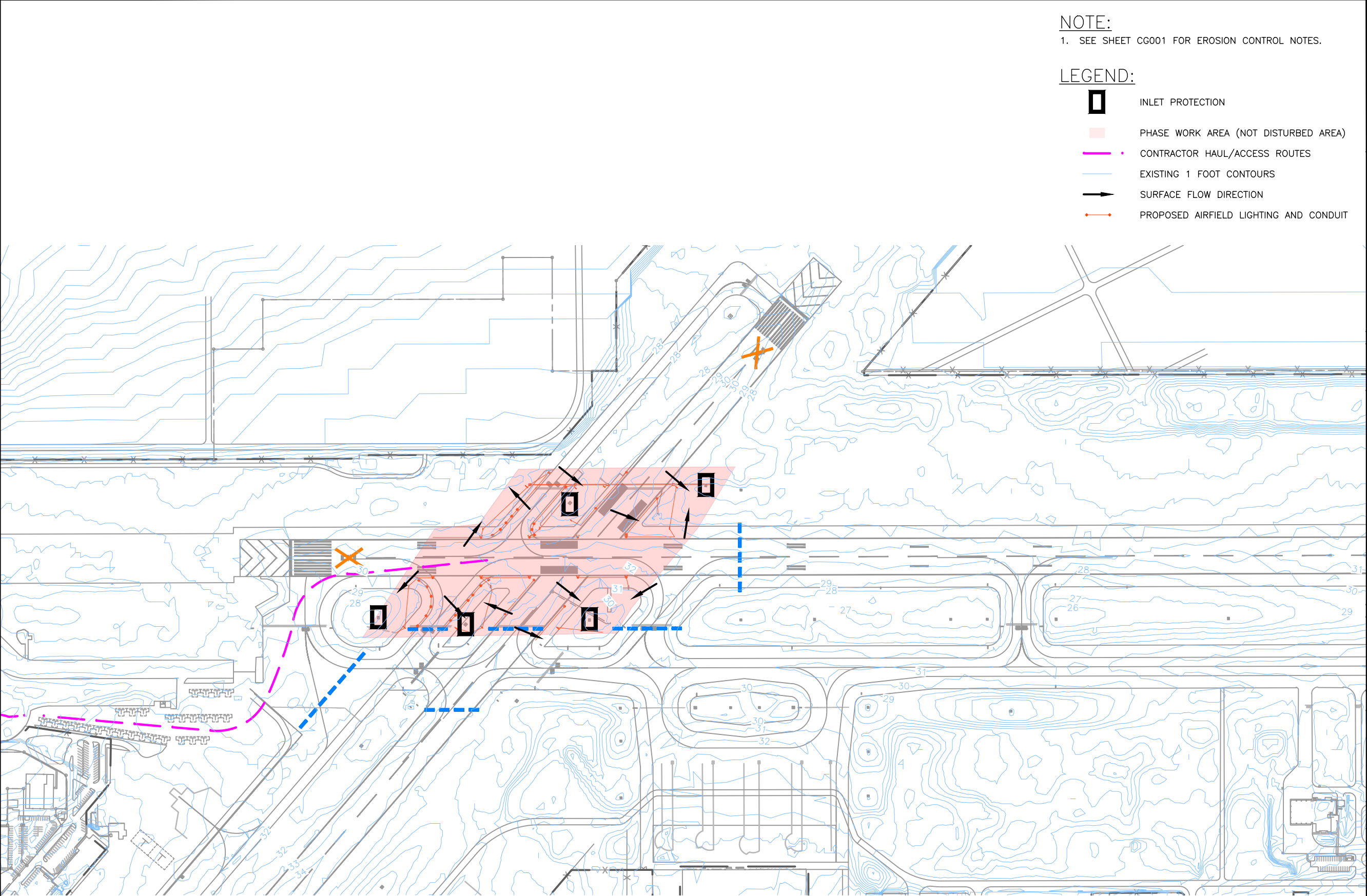
SHEET:

3 OF 102







DWG. NO.

FIGURE 16





NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
-  INLET PROTECTION
 -  PHASE WORK AREA (NOT DISTURBED AREA)
 -  CONTRACTOR HAUL/ACCESS ROUTES
 -  EXISTING 1 FOOT CONTOURS
 -  SURFACE FLOW DIRECTION
 -  PROPOSED AIRFIELD LIGHTING AND CONDUIT



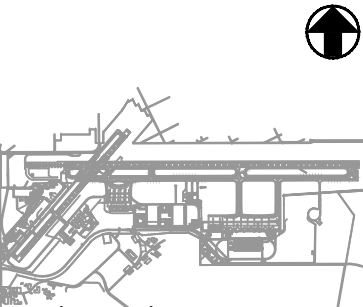
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____ of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

**TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT**
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

**EROSION CONTROL PLAN
- PHASE 6**

DATE:

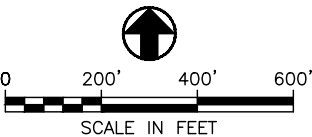
APRIL 19, 2022

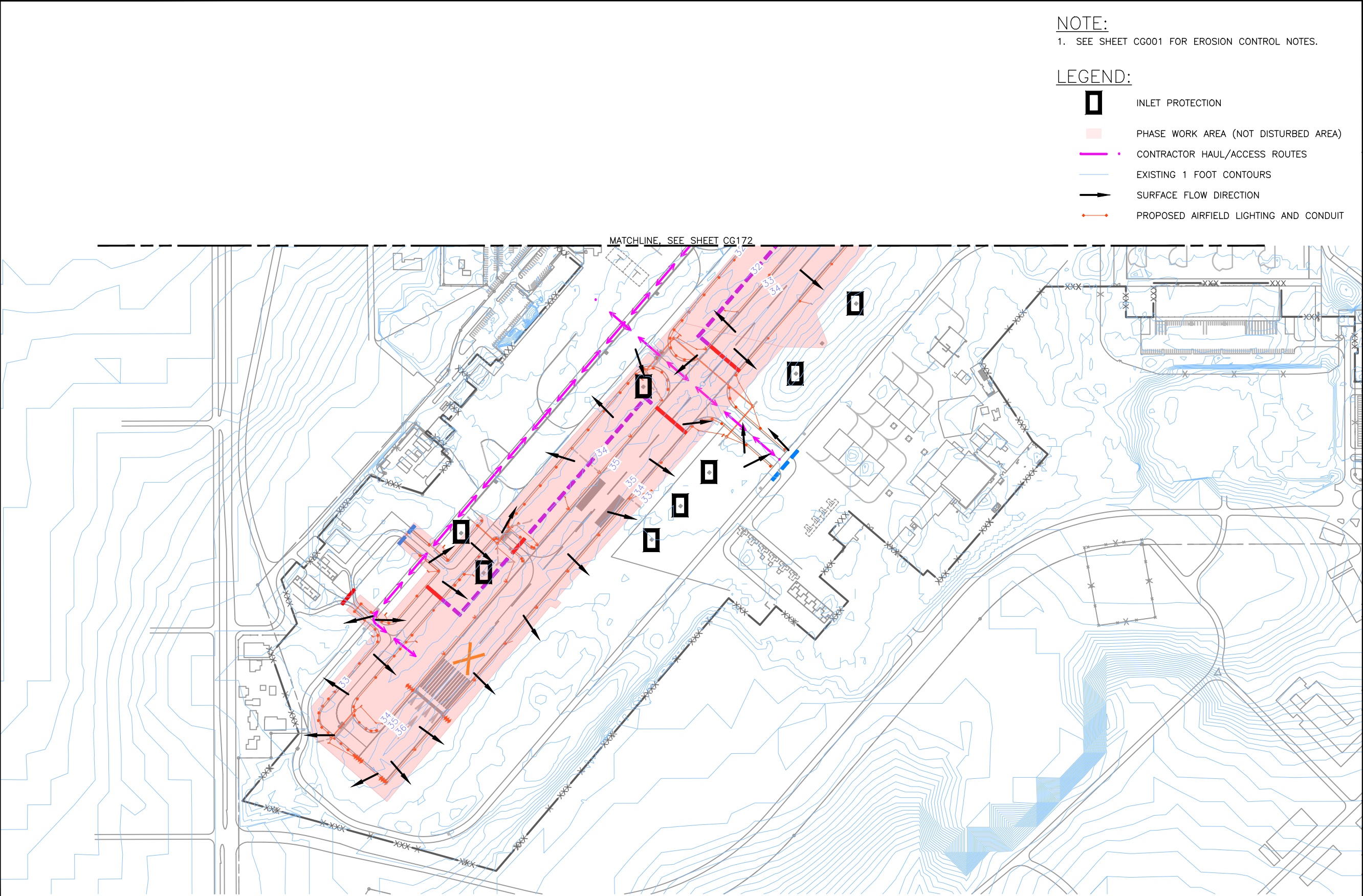
SHEET:

3 OF 102

DWG. NO.

FIGURE 17





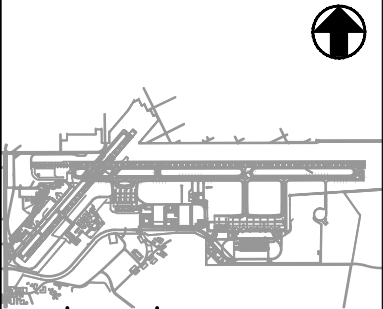
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature expiration date of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS
-----	------	-----------

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- PHASE 7

DATE:

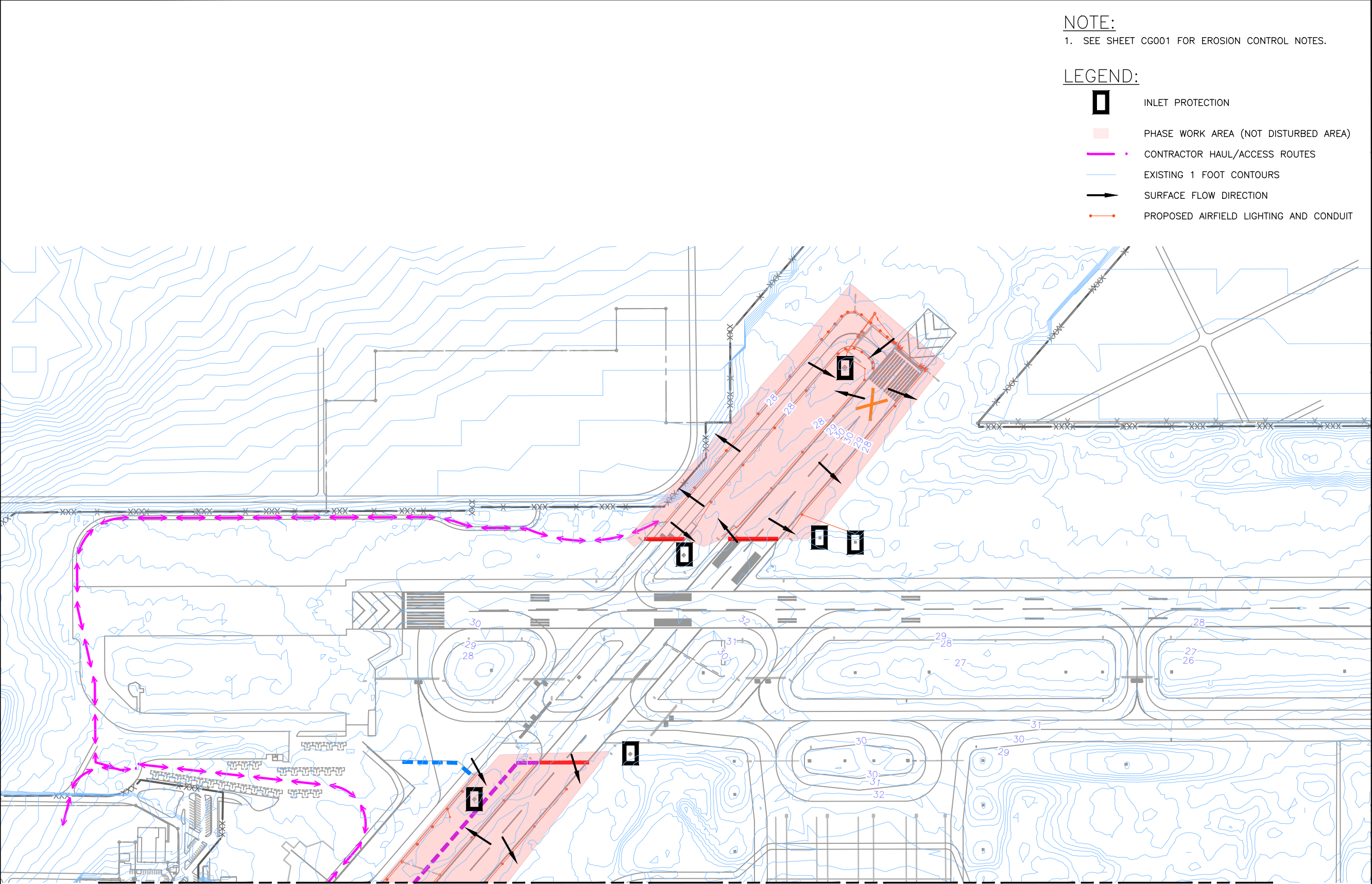
APRIL 19, 2022

SHEET:

3 OF 102

DWG. NO.

FIGURE 18



NOTE:
1. SEE SHEET CG001 FOR EROSION CONTROL NOTES.

- LEGEND:
- INLET PROTECTION
 - PHASE WORK AREA (NOT DISTURBED AREA)
 - CONTRACTOR HAUL/ACCESS ROUTES
 - EXISTING 1 FOOT CONTOURS
 - SURFACE FLOW DIRECTION
 - PROPOSED AIRFIELD LIGHTING AND CONDUIT



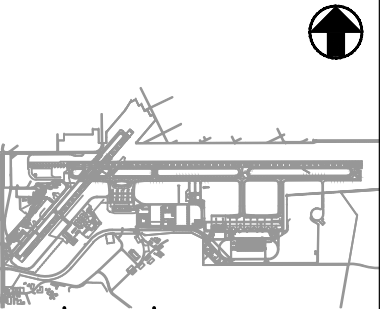
Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

This work was prepared by me or under my supervision.

signature _____ expiration date _____
of the license

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

100% FINAL SUBMITTAL

APRIL 19, 2022
DATE

PROJECT TITLE:

TAXIWAY AND RUNWAY
LIGHTING REPLACEMENT
AT
HILO INTERNATIONAL AIRPORT
SOUTH HILO, HAWAII

PROJECT NO.:

AH1021-19

SHEET TITLE:

EROSION CONTROL PLAN
- PHASE 7

DATE:

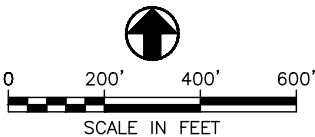
APRIL 19, 2022

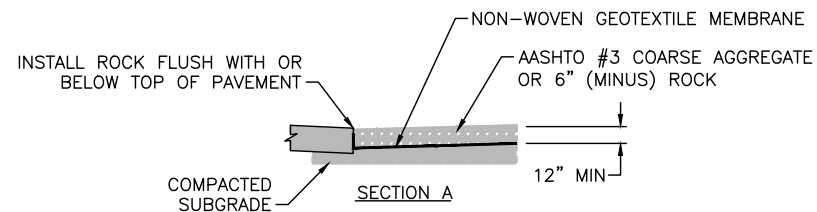
SHEET:

39 OF 102

DWG. NO.

FIGURE 19





1. THE CONTRACTOR SHALL MAINTAIN A SWEEPER TRUCK ON-SITE TO CONTINUOUSLY CLEAN THE SURFACE OF ALL PAVED AREAS OF FOREIGN OBJECT DEBRIS (FOD) THAT MAY RESULT FROM HAULING ACTIVITIES. PAVED SURFACES SHOULD BE CLEANED DAILY, AT A MINIMUM, AT THE END OF EACH CONSTRUCTION DAY.
2. REGULAR MAINTENANCE TO PREVENT TRACKING OF MUD ONTO PAVED SURFACES WILL REQUIRE TOP DRESSING THE CONSTRUCTION ENTRANCE WITH ADDITIONAL ROCK OR REMOVAL AND REINSTALLATION OF THE PAD.
3. THE CONSTRUCTION ENTRANCE SHALL BE REMOVED ENTIRELY UPON COMPLETION OF THE PROJECT.
4. CONSTRUCTION ENTRANCE AND ASSOCIATED ACTIVITIES ARE INCIDENTAL TO MOBILIZATION.

A cross-sectional diagram of a stormwater inlet. The inlet is a circular opening in a flat surface. An 'INLET GRATE' is located at the top of the inlet. A 'RETRIEVAL STRAP' is attached to the grate. An 'ADAPTER SKIRT' is a flexible material that extends from the grate down into the inlet. 'GEOTEXTILE FABRIC' is placed under the adapter skirt. 'SEDIMENT ACCUMULATION' is shown at the bottom of the inlet. An 'OVERFLOW' is shown on the right side of the inlet, labeled '(TO BYPASS PEAK STORM VOLUMES)'. The diagram includes dimensions: '4'-0"' for the width of the inlet grate, '2'-0"' for the depth of the inlet, and '4'-0"' for the width of the adapter skirt. Arrows indicate the flow of water from the grate, through the adapter skirt, and into the inlet, with some water overflowing to the right.

1. IN THE EVENT OF ABOVE NORMAL RAINFALL, CONTRACTOR SHALL REMOVE INLET PROTECTION AND REPLACE AFTER EVENT HAS PASSED.

SECTION

10" OR 18" BERM BARRIER
(MULTI-FILAMENT POLYPROPYLENE)

LIMITS OF GRADING
AND/OR GRUBBING

PROTECTED AREA

WORK AREA
RUNOFF FLOW

COLLECTED
SEDIMENT

PLAN

10" OR 18" BERM BARRIER
(MULTI-FILAMENT POLYPROPYLENE)

WORK AREA
RUNOFF FLOW

PROTECTED AREA

2" x 2" WOOD
STAKE (TYP)

1. REFER TO SPECIFICATION
FOR FILLER MATERIAL.

PLAN

50'-0"

6"

2'

1'

3

1

IMPERMEABLE LAYER

2'

1'

3

1

EROSION CONTROL BERM (ALL SIDES)

BURY ENDS OF IMPERMEABLE LAYER UNDER BERM

TOP OF BERM

SECTION A

1. THE MINIMUM THICKNESS OF THE IMPERMEABLE LAYER SHALL BE A MINIMUM OF 10ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS, OR OTHER DEFECTS. MULTIPLE SHEETS MUST BE ADHERED SUCH THAT ALL LIQUIDS ARE CONTAINED.

signature	expiration date of the license
-----------	-----------------------------------

DSGN.	DRWN.	CHKD.	APPD.
DC	SW	MS	CR

NO.	DATE	REVISIONS
-----	------	-----------

APRIL 19, 2022
DATE

TAXIWAY AND RUNWAY LIGHTING REPLACEMENT AT HILO INTERNATIONAL AIRPORT SOUTH HILO, HAWAII

AH1021-19

EROSION CONTROL DETAILS

DATE:	DWG. NO. FIGURE 20
APRIL 19, 2022	
SHEET:	
40 OF 102	

CALCULATIONS:

Runoff Quantity

Rational Method, $Q = CIA$

where:

Q= flow rate, cfs
C= runoff coefficient
I= rain fall intensity, in/hr
A= drainage area, acres

Construction Phase 1

Runoff coefficient, C= 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
Length= 825 ft
Inlet concentration time, Tc= 10 minutes; ref Plate 3 on page 17
Rainfall intensity, i= 10.1 in/hr; ref Plate 4 on page 17
Drain Area, A= 7.04 acres
Flow Rate, Q= 39.11 cfs

Construction Phase 2a

Runoff coefficient, C= 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
Length= 870 ft
Inlet concentration time, Tc= 12 minutes; ref Plate 3 on page 17
Rainfall intensity, i= 9.6 in/hr; ref Plate 4 on page 17
Drain Area, A= 1.90 acres
Flow Rate, Q= 10.03 cfs

Construction Phase 2b

Runoff coefficient, C= 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
Length= 885 ft
Inlet concentration time, Tc= 10.25 minutes; ref Plate 3 on page 17
Rainfall intensity, i= 10 in/hr; ref Plate 4 on page 17
Drain Area, A= 8.74 acres
Flow Rate, Q= 48.07 cfs

Construction Phase 3

Runoff coefficient, C= 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
Length= 390.00 ft

Inlet concentration time, T_c = 8 minutes; ref Plate 3 on page 17
 Rainfall intensity, i = 12 in/hr; ref Plate 4 on page 17
 Drain Area, A = 1.55 acres
 Flow Rate, Q = 10.23 cfs

Construction Phase 4

Runoff coefficient, C = 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
 Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
 Length= 670.00 ft
 Inlet concentration time, T_c = 8.5 minutes; ref Plate 3 on page 17
 Rainfall intensity, i = 10.75 in/hr; ref Plate 4 on page 17
 Drain Area, A = 5.74 acres
 Flow Rate, Q = 33.94 cfs

Construction Phase 5

Runoff coefficient, C = 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
 Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
 Length= 430.00 ft
 Inlet concentration time, T_c = 9 minutes; ref Plate 3 on page 17
 Rainfall intensity, i = 10.5 in/hr; ref Plate 4 on page 17
 Drain Area, A = 3.86 acres
 Flow Rate, Q = 22.29 cfs

Construction Phase 6

Runoff coefficient, C = 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
 Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
 Length= 450.00 ft
 Inlet concentration time, T_c = 9 minutes; ref Plate 3 on page 17
 Rainfall intensity, i = 10.5 in/hr; ref Plate 4 on page 17
 Drain Area, A = 3.45 acres
 Flow Rate, Q = 19.92 cfs

Construction Phase 7

Runoff coefficient, C = 0.55 (Development Type; Industrial & Business); ref Table 1 on page 14
 Intensity of 1-hr Rainfall= 5 in (10 year); ref Plate 1 on page 15
 Length= 545 ft
 Inlet concentration time, T_c = 10 minutes; ref Plate 3 on page 17
 Rainfall intensity, i = 10.1 in/hr; ref Plate 4 on page 17
 Drain Area, A = 3.89 acres
 Flow Rate, Q = 21.61 cfs

Attachment B

Training Logs and Subcontractor Certifications

INSTRUCTIONS

- *Key and supervisory personnel (superintendents, engineers, etc.) employed by the prime contractor and personnel involved in the project's stormwater compliance complete must, at minimum, complete the following:*
 - *View the DOTA's Construction BMP Training Video and Presentation*
 - *Complete the Construction BMP Training Quiz*
 - *Submit the completed quiz to DOT AIR-EE at dot.air.environmental@hawaii.gov or via fax to 808-838-8017.*
 - *Review and understand the SWPPP and its location onsite.*
- *Include a log of this training along with copies of completed quizzes in this SWPPP Attachment B.*

It is required for all contractor's and subcontractors' personnel to be trained on the site-specific BMPs that are utilized during construction, as well as spill response. Records of completion must be up to date and included in this SWPPP Attachment B.

The Construction BMP Training Video, Construction BMP Training Quiz, and Spill Response Factsheets can be found at the link below:

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

Attachment B (Cont.)

Training Logs and Subcontractor Certifications

INSTRUCTIONS

- *All subcontractors must complete the following Agreement. File a copy of the completed certification form from each subcontractor in this SWPPP Attachment B.*

SUBCONTRACTOR CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN

DOTA and NGPC Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided:

Signature: _____

Title: _____

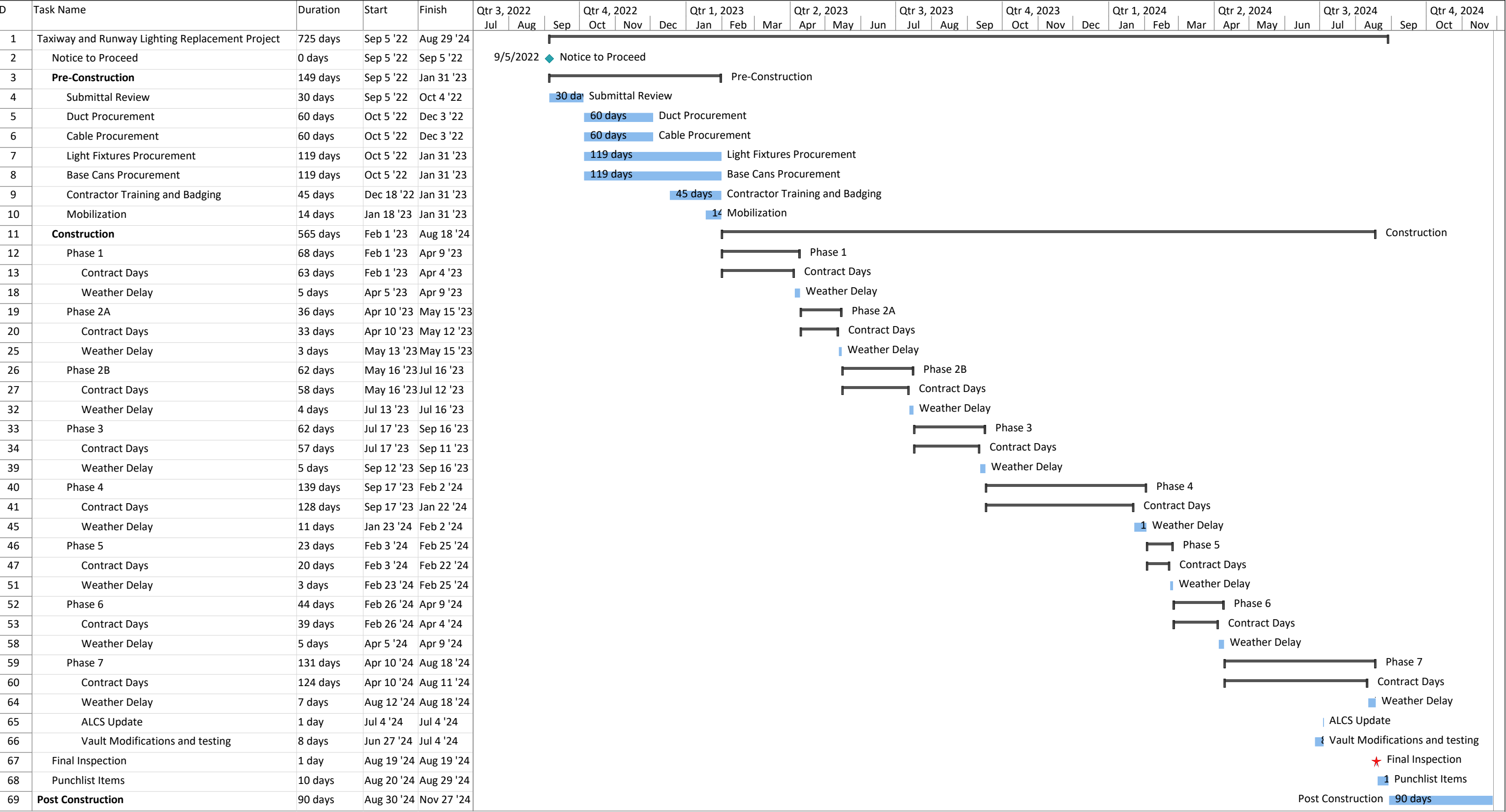
Date: _____

Attachment C

Schedule

- *Detailed construction schedule.*

Hilo International Airport
Taxiway and Runway Lighting Replacement Project
Construction Schedule



Attachment D

State, Federal, County, and Other Permits/Approvals

INSTRUCTIONS

- *Insert a copy of the NGPC and NOI Form C*
- *Insert a copy of the Duly Authorized Representative compliance submittal to DOH*
- *Insert other Federal, State, or County permits/approvals or forms applicable to this project.*
Examples include:
 - *Solid Waste Disclosure Form*
 - *DOTA's Construction Connection, Discharge, and Surface Runoff Permit*
 - *DOTA Contaminated Soil and Groundwater Review Form*
 - *Underground Injection Control Permit Exemption*
 - *Building Permit*
 - *Grading Permit*
 - *USACE Section 401 WQC*
 - *Special Management Area Approval*
- *A copy of the 2017 Construction General Permit is available at <https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents>*

Attachment E

Construction Activities BMP Field Manual and Manufacturer's Specification Sheet for BMP Products

INSTRUCTIONS

- ***Include applicable BMP sheets from the DOTA Construction Activities Best Management Practices (BMP) Field Manual.***

The purpose of the Construction Activities Best Management Practices (BMP) Field Manual is to provide guidance on BMP selection, installation, and maintenance procedures for construction activities. Implementation of these BMPs is intended to prevent or reduce the discharge of pollutants from leaving the construction site, thereby protecting State waters from pollutant discharges.

BMP selection should be determined by an evaluation of the existing conditions, requirements of the project area, and potential pollutants. It is advised to install multiple BMPs to effectively prevent pollution from entering the MS4. For example, drain inlet protection is considered the last defense and should be combined with other BMPs that are designed to prevent pollution at the source.

For Permanent BMP measures, refer to the following sources.

- ☐ Stormwater Permanent BMP Manual located at
 - o Daniel K. Inouye International Airport previously known as Honolulu International Airport (HNL) Stormwater Management Program Plan (SWMPP), Section D Permanent BMP Program, Attachment D.1 Construction Activities BMP Field Manual
 - o Kahului Airport (OGG) Construction and Post-Construction Stormwater Management Plan, Section 2 and Appendix G
- ☐ Permanent BMP Operations & Maintenance Manual
 - o HNL SWMPP Section D Permanent BMP Program, Attachment D.4.
 - o OGG Construction and Post-Construction Stormwater Management Plan, Section 2 and Appendix I
- ☐ HNL SWMPP Section D Permanent BMP Program, Attachment D.2 Post-Construction BMP Handout.

The above references can be found at the link below:

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

Attachment E (Cont.)

Construction Activities BMP Field Manual and Manufacturer's Specification Sheet for BMP Products

INSTRUCTIONS

- *Include Manufacturer's Specification Sheet for the specific BMP products to be used onsite.*

2.0 EROSION CONTROL BMPs

2.1 C.1 Scheduling

Description

Proper scheduling of construction activities can reduce the area and duration of soil exposure to erosion by wind, rain, runoff, and vehicle tracking.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C1.1	Avoid rainy periods as much as possible. Schedule major grading operations during dry months (April through October).
<input checked="" type="checkbox"/>	C1.2	Monitor the weather forecast for rainfall. Allow sufficient time before rainfall begins to stabilize the soil with vegetation or physical means or to install temporary sediment trapping devices.
<input checked="" type="checkbox"/>	C1.3	Minimize area of soil exposed at any one time. Schedule projects to disturb only small portions of the site at a time. Complete grading as soon as possible.
<input checked="" type="checkbox"/>	C1.4	Avoid creation of open-water areas or features that can attract wildlife that are hazardous to airport operations.
<input checked="" type="checkbox"/>	C1.5	Stabilize the finished graded area within seven (7) calendar days after completion of grading or one (1) calendar day before an anticipated rainfall event. Initiation of stabilization must commence within one (1) calendar day from the end of soil-disturbing activities.
<input checked="" type="checkbox"/>	C1.6	Stabilize non-active exposed areas, where activity will not resume for a period of 14 or more calendar days, within seven (7) calendar days from the end of soil-disturbing activities or one (1) calendar day before an anticipated rainfall event. Initiation of stabilization must commence within one (1) calendar day from the end of soil-disturbing activities.
<input checked="" type="checkbox"/>	C1.7	Backfill open trenches as soon as possible. Sequence trenching projects so open portions of the trench are backfilled before excavating the next trench section.
<input checked="" type="checkbox"/>	C1.8	Minimize disturbance on steep slopes (greater than 15 percent in grade). If disturbance of steep slopes is unavoidable, phase disturbance and use stabilization techniques.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M1.1	Verify that the work is in accordance with the construction schedule. If the work deviates from the schedule, take corrective actions.
<input checked="" type="checkbox"/>	M1.2	Update the construction schedule as specified in the contract or as needed for unforeseen changes.

2.2 C.2 Preservation of Existing Vegetation

Description

Carefully planned preservation and protection of existing vegetation at construction sites minimizes the potential of harming or needlessly destroying existing trees, vines, shrubs and/or grasses that stabilize soil and control erosion. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. Vegetation also helps to keep soil from drying out and becoming susceptible to erosional wind sweeps. Identifying the type of vegetation desirable or ideal for the area to preserve can also contribute to the aesthetics of the post-construction site.

Limitations

- Topography, sub-surface geological characteristics, soil quality and a restrictive land development area are just a few site conditions that can make it difficult and expensive to preserve existing vegetation at a development site.
- Federal Aviation Administration (FAA) rules regarding aircraft clearances and lines of sight may require the removal of existing vegetation. Reduced root systems equate to diminished anchoring of soil and a proportional increase in erosion via traffic (foot or vehicular/machinery).

Practice		
<input checked="" type="checkbox"/>	C2.1	Preservation of existing vegetation shall be practiced in the following locations: <ul style="list-style-type: none"> • Areas within the project site where construction activities are not required. • Sensitive areas where natural vegetation exists and should be preserved, such as on steep slopes (e.g., steeper than 3:1), areas near watercourses, and wooded areas. • Areas where local, state, or federal governments require preservation, such as delineated wetlands, marshes, shorelines, conservation land, etc. • Swales and natural drainage ways and paths.
<input checked="" type="checkbox"/>	C2.2	The following criteria may be used for deciding which vegetation will remain on the site: <ul style="list-style-type: none"> • Aesthetic values: Consideration should be given to foliage, flowering habits, bark and crown characteristics (for trees). • Freedom from disease and rot. • Life span of trees: Short-lived trees need not be preserved. • Environmental values: Habitat; screening; and buffers. • Sudden exposure: Save vegetation that grows in direct sunlight and is able to withstand radiated heat from proposed structures and pavement. • Space needed: Sufficient space must be provided between the vegetation and any structures, electric and telephone lines, water and sewer lines, driveways and roadways.
<input checked="" type="checkbox"/>	C2.3	Do not include plant species that compete with the existing vegetation in landscaping plans.
<input checked="" type="checkbox"/>	C2.4	Minimize disturbed areas or phase work to preserve pre-existing vegetation whenever feasible and for as long as possible.
<input checked="" type="checkbox"/>	C2.5	Inspect swales and natural drainage ways prior to an anticipated rainfall event, after the rainfall event, and regularly at the end of each workweek.
<input checked="" type="checkbox"/>	C2.6	Preserve native topsoil where practicable.
<i>METHODS FOR PROTECTING EXISTING VEGETATION AND TREES INCLUDE:</i>		
<input checked="" type="checkbox"/>	C2.7	Protect trees and their root systems during construction by prohibiting soil disturbance within a specified distance identified in the project plans, which also helps prevent soil erosion.

C.2 Preservation of Existing Vegetation (continued)

Practice		
<input checked="" type="checkbox"/>	C2.8	Clearly mark, flag or fence areas where vegetation is to be preserved and trees to remain.
<input checked="" type="checkbox"/>	C2.9	Stake off root system limits (dripline of tree).
<input type="checkbox"/>	C2.10	Tree wells and retaining walls (permanent) help preserve existing vegetation, but must be large enough to protect the root system.
<input checked="" type="checkbox"/>	C2.11	When grading under trees is necessary, excavation and fill is to be limited to one foot within the tree driplines
<input checked="" type="checkbox"/>	C2.12	Do not locate construction traffic route, spoil stockpile, etc., in areas where significant adverse impact on existing vegetation may occur.
<input checked="" type="checkbox"/>	C2.13	Prepare landscaping plans that preserve as much existing vegetation as possible and ensures the required care for this vegetation to thrive during and after construction.
<input checked="" type="checkbox"/>	C2.14	Define and protect with berms, fencing, signs, etc., a setback area from vegetation to be preserved. Setback distance is to be based on the location, species, size, and age of the vegetation to be preserved and on the potential impact of adjacent construction activities or permanent improvement. No disturbance of any kind is to be allowed within the setback area around the vegetation to be preserved.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M2.1	Ensure that the limits of disturbance are clearly marked at all times. If damage to existing vegetation still occurs, consult with an arborist.
<input checked="" type="checkbox"/>	M2.2	Provide training for personnel regarding which vegetation will be preserved and the methods of preservation.

2.3 C.3 Location of Potential Sources of Sediment

Description

Proper location of potential sources of sediment can reduce erosion and the discharge of sediment from construction sites.

Limitations

- Prevention of sediment-laden runoff must be supplemented with mulching, planting, and structural controls such as berms, silt fences, and silt basins.
- Contaminated soil may need to be managed separately.

Practice		
<input checked="" type="checkbox"/>	C3.1	Lay out the work site so that haul roads and stockpiles are buffered with vegetated areas to remove suspended sediment and other pollutants from runoff prior to discharging off-site. Vegetation along the perimeter of the site, especially on the downhill side for sloped sites, provides an effective buffer against sediment leaving the construction site.
<input checked="" type="checkbox"/>	C3.2	Locate stockpiles away from waterways or low spots.
<input checked="" type="checkbox"/>	C3.3	Redirect offsite runoff, where possible, so that it flows through or around the work site without contacting areas where the surface has been disturbed.
<input checked="" type="checkbox"/>	C3.4	Properly maintain vegetation at swales and natural drainage ways.
<input checked="" type="checkbox"/>	C3.5	If available, use naturally level areas for parking and equipment staging during construction.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M3.1	Verify that the work site lay out is in accordance with the project phasing plan. Update the layout per phase of work. An updated lay out plan should be submitted to the Construction Manager prior to the start of work for that phase.
<input checked="" type="checkbox"/>	M3.2	Inspect swales and natural drainage ways prior to an anticipated rainfall event, after the rainfall event, and regularly at the end of each workweek.
<input checked="" type="checkbox"/>	M3.3	Educate personnel about proper locations of potential sources of sediment at the site.

2.6 C.6 Dust Control

Description

Dust control measures are used to stabilize soil from wind erosion, and reduce dust generated by construction activities.

Limitations

- Watering prevents dust only for a short period and must be applied daily (or more often) to be effective.
- Excessive water usage for dust control may cause erosion.
- Oil is not to be used for dust control because the oil may migrate into a drainage way and/or seep into the soil.
- Certain dust suppression chemicals may make soil water repellent, increasing runoff. Chemical treatment of the soil shall not be allowed without the approval of the Engineer.

Practice		
<input checked="" type="checkbox"/>	C6.1	Schedule construction activities to minimize exposed areas.
<input type="checkbox"/>	C6.2	Stabilize exposed soils until permanent BMPs are installed. If stabilizing by water, water continuously throughout the workday, and avoid over saturation to prevent excessive runoff.
<input checked="" type="checkbox"/>	C6.3	Identify and stabilize key access points prior to commencement of construction.
<input checked="" type="checkbox"/>	C6.4	Minimize the impact of dust by anticipating the direction of prevailing winds.
<input type="checkbox"/>	C6.5	Direct most construction traffic to stabilized roadways within the project site.
<input checked="" type="checkbox"/>	C6.6	Comply with State of Hawaii, Department of Health (DOH) requirements for dust control.
<input checked="" type="checkbox"/>	C6.7	Chemical treatment of the soil shall not be allowed without the approval of the Engineer.
<input checked="" type="checkbox"/>	C6.8	If using water or chemical treatment, maintain daily records of the date and time of application and number of gallons or loads of product applied. Provide records upon request by the Engineer. When using water, only potable water shall be used. Oil is not to be used for dust control.
<input checked="" type="checkbox"/>	C6.9	If dust screen or fence is used in conjunction with other dust control measures, the Airport Manager or Code 22 must approve the location. Screens located on or adjacent to the Airport Operations Area (AOA) fence line may not be allowed due to airport security concerns.
<input checked="" type="checkbox"/>	C6.10	Dust screen and fence must be of proper size and height to contain airborne dust particles. It shall be of continuous length without gaps and firmly secured to posts and other supporting devices.
<input checked="" type="checkbox"/>	C6.11	Locations for dust screen shall consider aircraft operations that can create localized high velocity wind gust.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M6.1	Inspect all areas that have been sprayed to ensure coverage. Ensure that excessive runoff is not generated.
<input checked="" type="checkbox"/>	M6.2	Reapply water when soil becomes dry.
<input checked="" type="checkbox"/>	M6.3	Inspect dust screens regularly. Repair any damage, such as rips and tears, within two (2) calendar days. Remove any accumulated dust at base of screen.
<input checked="" type="checkbox"/>	M6.4	Provide personnel responsible for dust control with adequate training.

2.7 C.7 Topsoil Management

Description

The salvaging, stockpiling and reapplication of topsoil or other selected material to be used as growth medium in the reclamation of surface disturbances.

Limitations

- Avoid installation and placement of topsoil during windy and rainy weather events.

Practice		
<input checked="" type="checkbox"/>	C7.1	Conduct a site-specific survey of the project area as a part of baseline investigations. The soil survey will identify the soils suitable for salvaging and their depth prior to disturbance.
<input checked="" type="checkbox"/>	C7.2	Salvage all suitable topsoil and suitable material to be utilized in reclamation of the surface disturbance wherever feasible and stockpile for reapplication.
<input checked="" type="checkbox"/>	C7.3	If conditions permit, apply topsoil or growth medium directly to disturbed areas.
<input checked="" type="checkbox"/>	C7.4	Soil replacement depths are determined by several factors including: <ul style="list-style-type: none">• Pre-disturbance soil depths;• Vegetation types; and• The physical and chemical properties of the material being covered. Generally speaking, the poorer the physical and chemical properties of the spoil or waste material, the greater the required depth of replacement soil.
<input checked="" type="checkbox"/>	C7.5	Conduct soil testing (nutrients, pH and toxicity factors) of the replacement soils and the materials to be covered prior to application of topsoil.
<input checked="" type="checkbox"/>	C7.6	Dust control measures, perimeter sediment controls, and storm drain inlet protection measures must be in place prior to and during placement of topsoil.
<input checked="" type="checkbox"/>	C7.7	Stabilize exposed topsoil areas within three (3) calendar days after installation is complete.
<i>CONSIDERATIONS FOR DEVELOPING A TOPSOIL MANAGEMENT PLAN:</i>		
<input checked="" type="checkbox"/>	C7.8	The amount and quality of existing topsoil or growth medium.
<input checked="" type="checkbox"/>	C7.9	The amount of surface disturbance (area), which will receive topsoil or growth medium and the required depth of application.
<input checked="" type="checkbox"/>	C7.10	Methodology to be utilized for topsoil or growth medium salvage.
<input checked="" type="checkbox"/>	C7.11	Storage location, the duration of storage of salvaged soils, and the protection of stockpiled soils to prevent erosion.
<input checked="" type="checkbox"/>	C7.12	The feasibility of direct replacement of the salvaged soils.
<input checked="" type="checkbox"/>	C7.13	Availability of additional growth media to supplement topsoil replacement.

C.7 Topsoil Management

(continued)

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M7.1	Review and update the topsoil management plan at the beginning of each workweek until all grading operations are completed.
<input checked="" type="checkbox"/>	M7.3	Conduct periodic maintenance of topsoil stockpiles to prevent erosion. Cover the topsoil stockpiles with plastic or another substrate, or re-vegetated, to protect from wind, rain, and erosion.
<input checked="" type="checkbox"/>	M7.2	Regularly inspect, maintain, and immediately repair dust control, perimeter sediment controls, and storm drain inlet protection measures until planting is fully established.

3.2 C.11 Compost Filter Berm or Sock

Description

A compost filter berm is a dike or compost product that is placed perpendicular to sheet flow runoff to retain sediment onsite. These are generally placed along the perimeter of a site and work to retain large volumes of water, and retain larger amounts of pollutants as water passes through the berm. The berm may either be vegetated or unvegetated.

Limitations

- Only applicable where flow does not exceed 1 cubic foot per second (cfs).
- Compost quality shall comply with all local, state, and federal requirements.
- Do not overlap berms by placing on top of each other.

Practice		
<input checked="" type="checkbox"/>	C11.1	Select the appropriately sized berm based on rainfall amount and slope.
<input checked="" type="checkbox"/>	C11.2	Fill a mesh tube with composted material and tie knots at both ends of the sock. Ensure that the berm is at least 10 inches in diameter.
<input checked="" type="checkbox"/>	C11.3	Install berm per manufacturers' recommended procedures and instructions.
<input checked="" type="checkbox"/>	C11.4	Place perpendicular to flow along the base or slopes or site perimeter. Ensure that the berm has good contact with the ground.
<input checked="" type="checkbox"/>	C11.5	When encountering a difference in elevation or "step" along the ground, such as curbs or wall, turn the end of the berm towards the flow along the face of the curb or wall. Extend the berm a minimum of 3-feet against the face of the curb or wall. Similarly, if the berm continues on the top of the curb or wall, turn the berm towards the flow for a minimum of 3-feet. Do not "bridge" the elevation difference, unless allowed per the manufacturer's recommended procedures and uses.
<input checked="" type="checkbox"/>	C11.6	Overlap the berms a minimum of 6 inches and place them side-by-side.
<input checked="" type="checkbox"/>	C11.7	Place stakes on the downstream side of berms that are located on slopes.
<input checked="" type="checkbox"/>	C11.8	Berms and socks shall be accessible and visible for inspection and monitoring. No materials and equipment shall be stored on top of or immediately abutting the berm or sock.
<input checked="" type="checkbox"/>	C11.9	When complete, compost may be added to the site as a soil amendment with approval from the Airport Manager or AIR-EE.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M11.1	Inspect berms prior to an anticipated rainfall event, after the rainfall event, and regularly at the end of each workweek.
<input checked="" type="checkbox"/>	M11.2	Repair damage sustained to the berms, such as ripped mesh, within two (2) calendar days after the incident or before the next anticipated rainfall event, whichever comes first.
<input checked="" type="checkbox"/>	M11.3	Remove sediment when accumulation reaches one-third the barrier height.
<input checked="" type="checkbox"/>	M11.4	Provide education for required personnel about proper berm installation and maintenance. Train on the importance of preventing sediment discharge.

3.3 C.12 Storm Drain Inlet Protection

Description

Devices of various designs which detain sediment-laden runoff and allow the sediment to settle out of the water prior to discharge into a storm drain inlet or catch basin.

Limitations

- Inlet protection must not create a potential hazard to traffic and pedestrians.
- Drainage area shall not exceed 1 acre.
- Runoff may bypass protected inlets on slopes.
- Ponding will occur at a protected inlet, with possible short-term flooding.
- Straw bales are NOT effective for inlet protection.

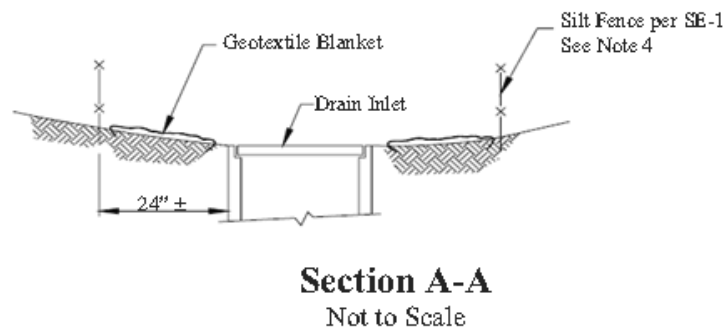
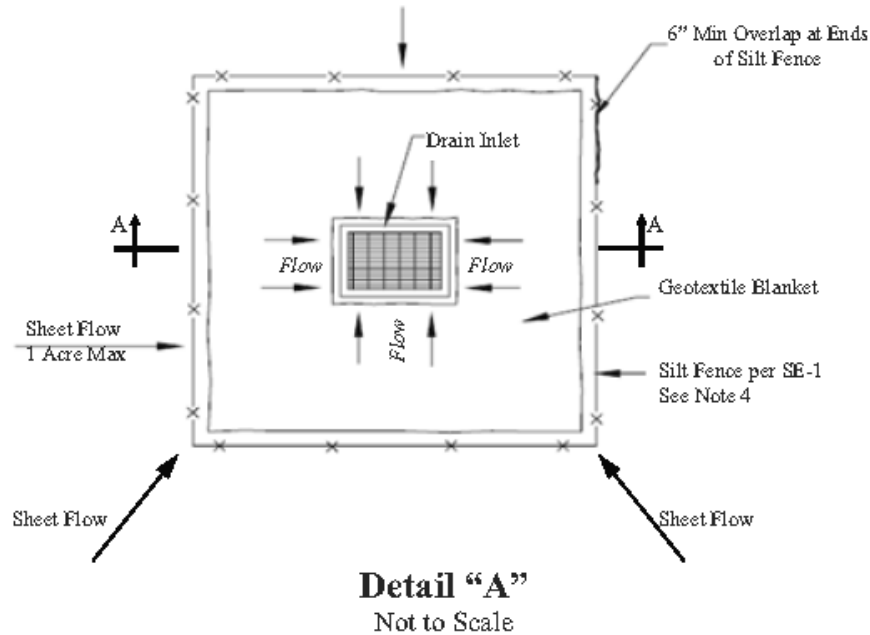
Practice		
<input checked="" type="checkbox"/>	C12.1	Protect every storm drain inlet potentially receiving sediment-laden runoff, either by covering the inlet or promoting sedimentation upstream of the inlet.
<input checked="" type="checkbox"/>	C12.2	<p>Five types of inlet protection are presented below; however, other effective methods and proprietary devices exist and may be selected:</p> <ul style="list-style-type: none"> • Filter Fabric Fence: Appropriate for drainage basins less than one acre with less than a 5 percent slope. • Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs. • Gravel and Wire Mesh Filter: Used on curb or drop inlets where construction equipment may drive over the inlet. • Sand Bag Barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets. • Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment. <p>Use only for drainage areas smaller than one acre unless a sediment trap first intercepts the runoff.</p>
<input checked="" type="checkbox"/>	C12.3	<p>Select the appropriate type of inlet protection as identified in C12.2 above and design as referred to or as described herein.</p> <ul style="list-style-type: none"> • Filter Fabric: Must be of sufficient strength and permeability to allow stormwater to pass through and retain sediment. Must be anchored such that the fabric will not fall into the drain when the grate is removed for maintenance.
<input checked="" type="checkbox"/>	C12.4	Install inlet protection per manufacturers' recommended procedures and instructions.
<input checked="" type="checkbox"/>	C12.5	Provide area around the inlet for water to pond without flooding structures and property.
<input checked="" type="checkbox"/>	C12.6	Remove inlet protection as directed by Airport Manager, Code 22 or other DOTA entity in anticipation of rain events or if they are creating an immediate safety impact to traffic or pedestrians at the Airport. Restore inlet protection devices immediately upon termination of rain event or notice from Airport.

Note: Example schematics for inlet protection are included herein for reference.

C.12 Storm Drain Inlet Protection (continued)

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M12.1	Inspect inlet protection devices prior to an anticipated rainfall event, after the rainfall event, and regularly at the end of each workweek. During extended rainfall events inspect inlet protection devices daily.
<input checked="" type="checkbox"/>	M12.2	Repair damage sustained to the inlet protection devices within two (2) calendar days after the incident or before the next anticipated rainfall event, whichever comes first.
<input checked="" type="checkbox"/>	M12.3	Remove sediment after each rainfall event or once the containment device is ½ full of sediment.
<input checked="" type="checkbox"/>	M12.4	Where there is evidence of sediment accumulation adjacent to the inlet protection measure or along the runoff flow pattern toward the inlet, such as a concrete gutter or swale, remove the deposited sediment by the end of the same day in which it is found or by the end of the following work day if removal by the same day is not feasible.
<input checked="" type="checkbox"/>	M12.5	Report any inlet protection failures and pollutant discharges (including sediment) into the storm drains to AIR-EE.
<input checked="" type="checkbox"/>	M12.6	Train required personnel about storm drain protection from sediment discharge and construction site contaminants.

C.12 Storm Drain Inlet Protection (continued)



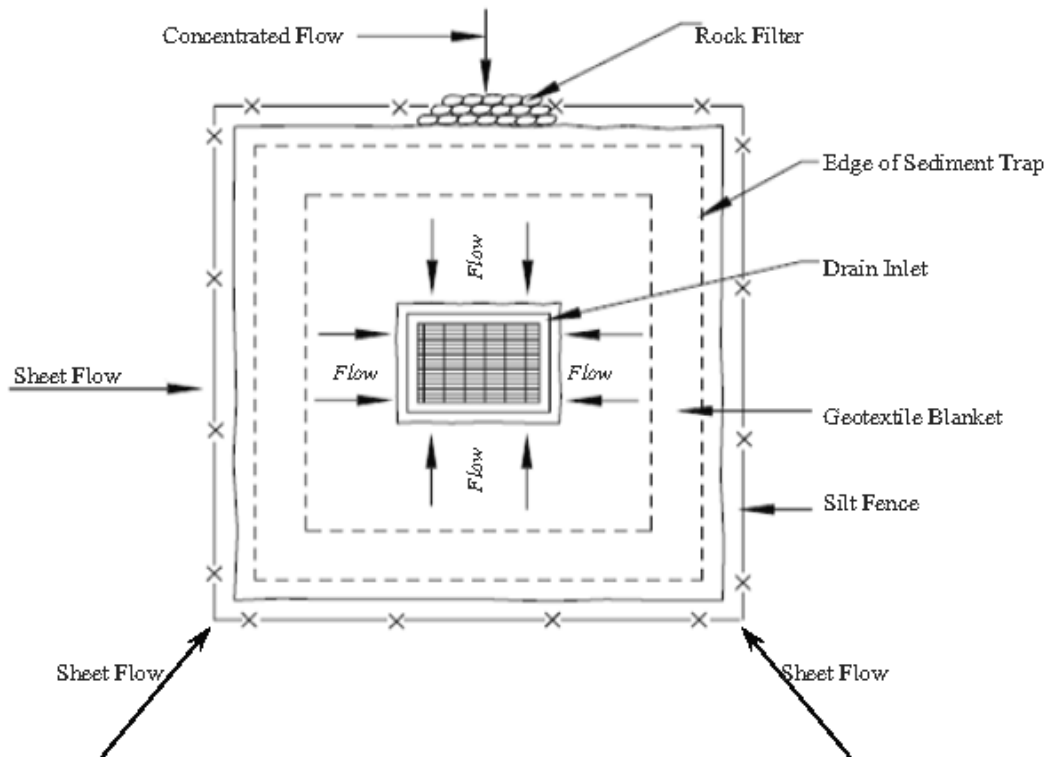
Notes:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable in concentrated flows.
4. Refer to BMP SE-1, Silt Fence for construction.

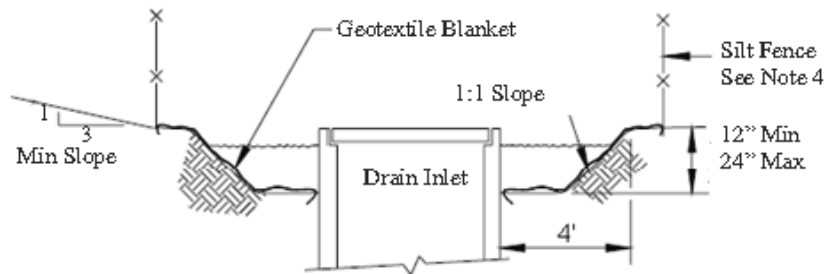
DI Protection Type 1, Filter Fabric Fence

Source: City and County of Honolulu BMP Manual, November 2011.

C.12 Storm Drain Inlet Protection (continued)



Detail "B"
Not to Scale



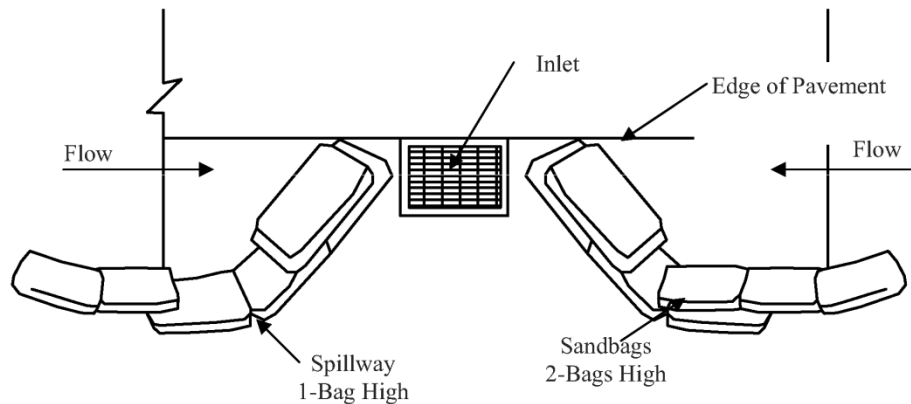
Notes:

1. For use in cleared and grubbed and in graded areas.
2. For concentrated flows, shape basin in 2:1 (L:W) ratio with length oriented towards direction of flow.
3. Size excavated trap to provide a minimum storage capacity calculated at the rate 67 yd³/acre of drainage area.
4. Refer to BMP SE-1, Silt Fence for construction.

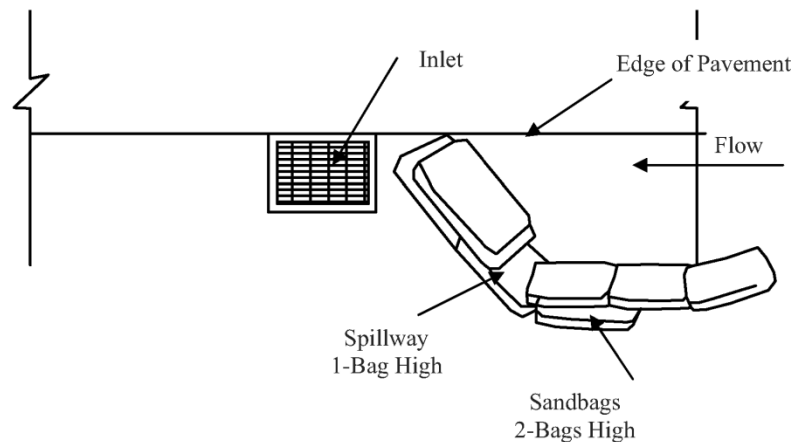
DI Protection Type 2, Excavated Drop Inlet Sediment Trap

Source: City and County of Honolulu BMP Manual, November 2011.

C.12 Storm Drain Inlet Protection (continued)



Typical Protection for Inlet on Sump, Detail "C"
Not to Scale



Typical Protection for Inlet on Grade, Detail "D"
Not to Scale

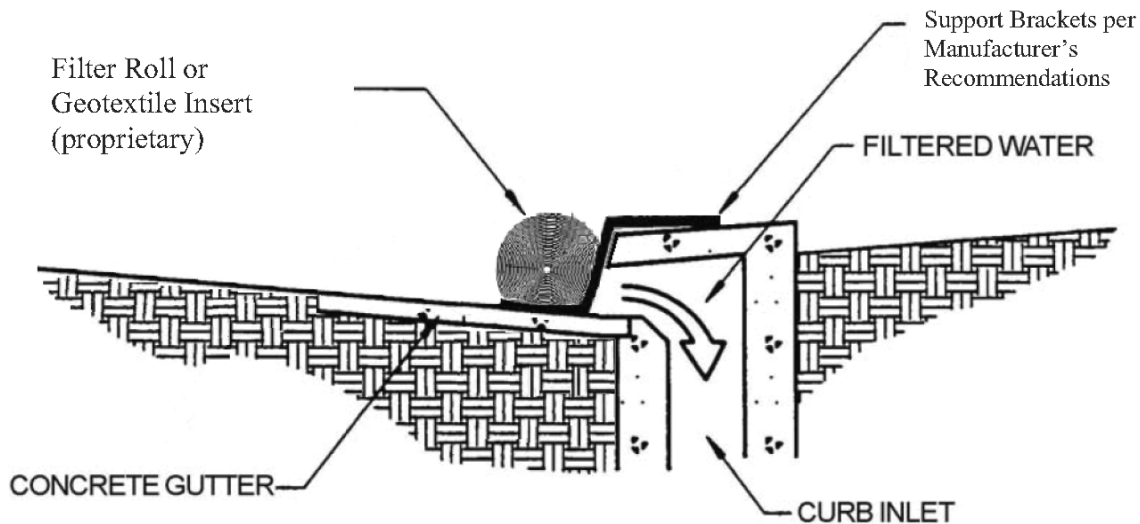
Notes:

1. Intended for short-term use. Not suitable for roads open to traffic.
2. Used to inhibit non-storm water flow.
3. Bags **should** be removed after adjacent operation is completed.
4. Not applicable in areas with high silts and clays without filter fabric.
5. Use sand bag made of geotextile fabric (not burlap) and fill with 0.75 in. rock or 0.25 in. pea gravel.
6. Construct on gently sloping street.
7. Leave room upstream of barrier for water to pond and sediment to settle.
8. Place several layers of sand bags - overlapping the bags and packing them tightly together.
9. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10 year storm) should not overtop the curb.
10. Do not use sandbags for roadways subject to traffic.
11. For traffic area, insert geotextile filter inserts instead of sandbags.

DI Protection Type 3, Gravel Bag

Source: City and County of Honolulu BMP Manual, November 2011.

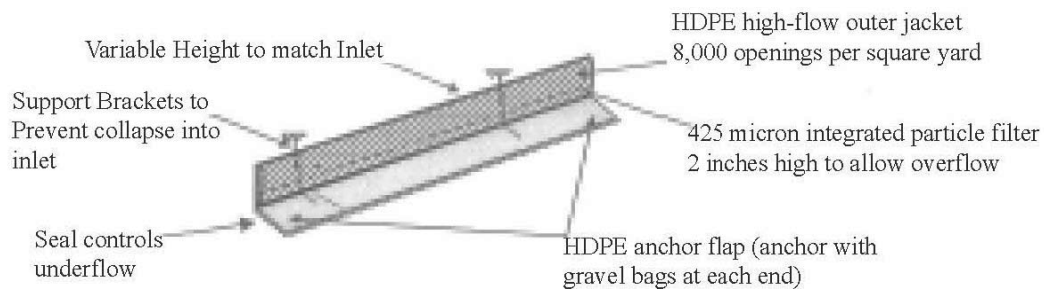
C.12 Storm Drain Inlet Protection (continued)



Detail "F"

Not to Scale and May Use Various Types of Geotextile Inserts

DI Protection Type 5, Filter Roll or Geotextile Insert with Supports for Curb Inlet



Detail "G"

Not to Scale and May Use Various Types and Styles of Geotextile Inserts

DI Protection Type 5, Geotextile Insert with Supports for Curb Inlet

Source: City and County of Honolulu BMP Manual, November 2011.

4.0 TRACKING CONTROL BMPs

4.1 C.15 Stabilized Construction Entrance/Exit

Description

A stabilized construction entrance/exit is a pad of aggregate underlain with filter cloth located where vehicles and/or equipment leave or enter a construction site to or from a paved surface. The purpose of a stabilized construction entrance/exit is to reduce the amount of sediment tracked offsite. The effectiveness of a stabilized construction entrance/exit is greatly increased if a wash rack is included for removing caked-on sediment from vehicles and equipment before they leave the site.

Limitations

- Periodic replenishment of surface aggregate is required.
- Additional street sweeping of adjacent roadways or other paved areas may also be required during the work. Ensure that storm drains and waterways are protected from discharges of street sweeping wastes.
- A wash rack and sediment trap can significantly increase the cost of a stabilized construction entrance.
- The effectiveness of a stabilized construction entrance is limited by the type and moisture content of construction site soils, whether or not a wash rack is included, and by the level of care taken to remove sediment from vehicles and equipment if a wash rack is used.

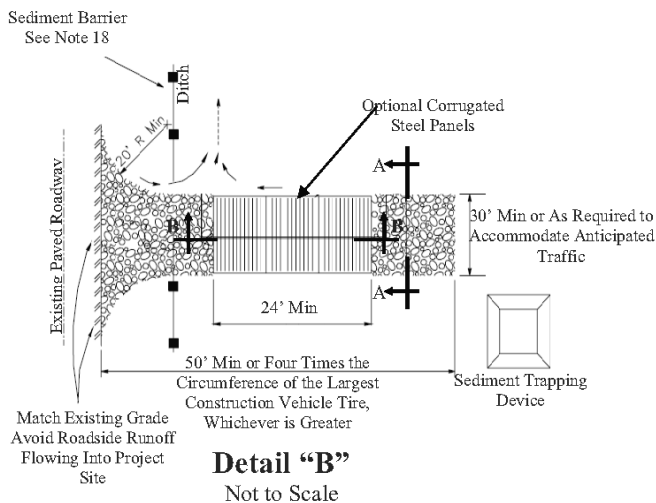
Practice		
<input checked="" type="checkbox"/>	C15.1	Construct stabilized construction entrances/exits on level ground where possible.
<input type="checkbox"/>	C15.2	Grade the entrance/exit to prevent runoff from leaving the construction site.
<input checked="" type="checkbox"/>	C15.3	Aggregate shall be 3- to 6-inch-diameter coarse aggregate.
<input checked="" type="checkbox"/>	C15.4	Minimum depth of aggregate is to be 12 inches or as recommended by the soils engineer.
<input checked="" type="checkbox"/>	C15.5	Stabilized construction entrances/exits are to be a minimum of 50-feet-long and 30-feet-wide.
<input checked="" type="checkbox"/>	C15.6	Provide ample turning radii as part of the stabilized entrance/exit.
<input type="checkbox"/>	C15.7	If a wash rack is provided, washing is to be done on paved or crushed stone pad that drains into a properly constructed sediment trap. Refer to C.13 Sediment Trap for the design, installation and maintenance of the sediment trap.
<input checked="" type="checkbox"/>	C15.8	Include additional BMPs that remove sediment prior to exit when the minimum dimensions cannot be met.
<input checked="" type="checkbox"/>	C15.9	The pavement shall not be cleaned by washing down the street.
<input checked="" type="checkbox"/>	C15.10	Restrict vehicle use to properly designated exit points.
<input checked="" type="checkbox"/>	C15.11	Provide drain inlet protection devices and/or perimeter sediment controls, as applicable.
<input checked="" type="checkbox"/>	C15.12	Construct stabilized construction entrance/exits at all points that exit onto paved roads, other paved areas, and sidewalks.

Note: Example schematics are included herein for reference.

C.15 Stabilized Construction Entrance/Exit
(continued)

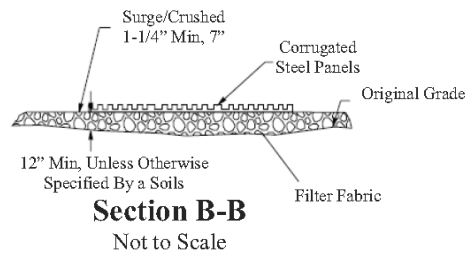
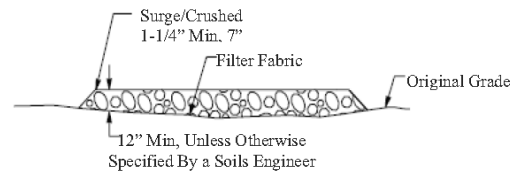
Maintenance and Inspection		
<input checked="" type="checkbox"/>	M15.1	Inspect the stabilized construction entrance/exit and wash rack ditches at the end of each workweek. If the stabilized construction entrance/exit is clogged with sediment remove the aggregate and separate and dispose of the sediment. Reconstruct or repair the stabilized construction entrance within two (2) calendar days.
<input checked="" type="checkbox"/>	M15.2	Inspect roadways and ensure that any tracking is swept and disposed properly. Ensure storm drains and waterways are protected from tracking discharges.
<input checked="" type="checkbox"/>	M15.3	Remove sediment tracked onto the roads, paved areas, and sidewalk, at a minimum, by the end of the day in which the track-out occurs.
<input checked="" type="checkbox"/>	M15.4	If tracking is excessive or sediment is being transported farther along the pavement or sidewalk by other vehicles traveling outside of the construction site, then, conduct sweeping immediately.
<input checked="" type="checkbox"/>	M15.5	However, if sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area away from drainage facilities, or vacuuming the wash water.
<input checked="" type="checkbox"/>	M15.6	Provide education for required personnel about proper stabilized construction entrance installation, use, and maintenance. Train on the importance of preventing sediment tracking.

C.15 Stabilized Construction Entrance/Exit (continued)



Notes:

1. Construct on level ground where possible.
2. Select 3 to 6 in. diameter stones.
3. Use minimum depth of stones of 12 in. or as recommended by soils engineer.
4. Construct length of 50 ft. minimum, and 30 ft. minimum width.
5. Rumble racks constructed of steel panels with ridges and installed in the stabilized entrance/exit will help remove additional sediment and to keep adjacent streets clean.
6. Provide ample turning radii as part of the entrance.
7. Limit the points of entrance/exit to the construction site.
8. Limit speed of vehicles to control dust.
9. Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
10. Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.
11. Design stabilized entrance/exit to support heaviest vehicles and equipment that will use it.
12. Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.
13. Place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but not exceeding 6 in. should be used.
14. Designate combination or single purpose entrances and exits to the construction site.
15. Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.
16. Implement SE-7, Street Sweeping and Vacuuming, as needed.
17. All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.
18. Construct sediment Barrier and channel runoff to sediment trapping device as appropriate.



Source: City and County of Honolulu BMP Manual, November 2011.

4.2 C.16 Construction Road Stabilization

Description

Access roads, subdivision roads, parking areas, and other onsite vehicle transportation routes should be stabilized immediately after grading and frequently maintained to prevent erosion and control dust. Efficient construction road stabilization not only reduces onsite erosion but can significantly speed onsite work, avoid instances of immobilized machinery and delivery vehicles, and generally improve site efficiency and working conditions during adverse weather.

Limitations

- The roadway slope should not exceed 15 percent.
- The roadway must be removed or paved when construction is complete.
- Certain chemical stabilization methods may cause stormwater or soil pollution and should not be used (refer to C.6 Dust Control BMPs).
- Management of construction traffic is subject to air quality control measures. Contact the local air quality management agency.

Practice		
<input checked="" type="checkbox"/>	C16.1	Road should follow topographic contours to reduce erosion of the roadway.
<input checked="" type="checkbox"/>	C16.2	Gravel roads should be a minimum 4-inch-thick, 2-3 inch-coarse aggregate base applied immediately after grading, or as recommended by soils engineer.
<input checked="" type="checkbox"/>	C16.3	Chemical stabilizers or water are usually required on gravel or dirt roads to prevent dust (refer to C.6 Dust Control BMPs).
<input checked="" type="checkbox"/>	C16.4	When evidence of erosion is noted, apply additional aggregate on gravel roads.
<input checked="" type="checkbox"/>	C16.5	Water dirt construction roads three or more times per day during the dry season.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M16.1	Inspect the stabilized construction roads at the end of each workweek and repair as needed before the start of the next workday.
<input checked="" type="checkbox"/>	M16.2	Provide education for required personnel about proper construction road installation and maintenance. Train on the importance of preventing sediment discharge.

5.2 C.18 Paving Operations and Waste Management

Description

Prevent or reduce the discharge of pollutants from paving operations by using measures to prevent stormwater pollution, properly disposing of wastes, and providing employee training.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C18.1	Avoid paving during wet weather.
<input checked="" type="checkbox"/>	C18.2	Use asphalt emulsions as prime coat where possible.
<input checked="" type="checkbox"/>	C18.3	Store materials away from drainage courses to minimize contact with stormwater runoff.
<input checked="" type="checkbox"/>	C18.4	Protect drainage course, particularly in sloped areas, by employing BMPs to divert runoff or trap/filter sediment. This includes, but not limited to, prior to application of tack coat, seal coat, slurry seal, and fog seal.
<input checked="" type="checkbox"/>	C18.5	Leaks and spills from paving equipment can contain toxic levels of heavy metal, oil, and grease. Place drip pans or absorbent materials under paving equipment when not in use.
<input checked="" type="checkbox"/>	C18.6	Clean up spills promptly with absorbent materials.
<input checked="" type="checkbox"/>	C18.7	Block/protect catch basins and cover manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
<input checked="" type="checkbox"/>	C18.8	Shovel or vacuum saw-cut slurry and remove from site. Cover or barricade storm drains during saw cutting to contain slurry. Slurry residue may be placed in a temporary pit (as described in the C.32 Concrete Operation and Waste Management BMP to promote evaporation). Dispose solid waste in accordance with the C.29 Solid Waste Management - Hazardous Waste and C.30 Solid Waste Management - Debris BMPs.
<input checked="" type="checkbox"/>	C18.9	When removing existing asphalt pavement, properly dispose of removed material.
<input checked="" type="checkbox"/>	C18.10	When stockpiling new asphalt pavement material or removed existing asphalt pavement, follow requirements for C.28 Protection of Stockpiles, as applicable.
<input checked="" type="checkbox"/>	C18.11	If paving involves Portland Cement Concrete, refer to C.32 Concrete Operation and Waste Management BMPs.
<input checked="" type="checkbox"/>	C18.12	If paving involves asphaltic concrete, follow these steps: <ul style="list-style-type: none"> • Sweep excess sand or gravel placed over new asphalt to prevent it from washing into storm drains, channels, or surface waters. Properly dispose of these wastes by referring to the Solid Waste Management BMP in this manual. • Old asphalt must be disposed of properly. Collect and remove all broken asphalt from the site and recycle whenever possible. • If paving involves an onsite mixing plant, follow the stormwater permitting requirements for industrial activities.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M18.1	Inspect and maintain paving equipment daily to minimize leaks and drips. Follow requirements for C.20 Vehicle and Equipment Cleaning, C.21 Vehicle and Equipment Refueling, and C.22 Vehicle and Equipment Operation and Maintenance, as applicable.
<input checked="" type="checkbox"/>	M18.2	Inspect drip pans daily. Clean, remove and properly dispose of the contents and rain accumulation.
<input checked="" type="checkbox"/>	M18.3	Inspect drain inlet protection devices and maintain as necessary.

5.7 C.23 Concrete Curing Water and Compounds Management

Description

Concrete curing is used in the construction of structure such as bridges, walls, columns, beams, large slabs, and structured foundations. Concrete curing includes the use of both chemical and water methods. Discharges of stormwater and non-stormwater exposed to concrete during curing may have a high pH and may contain chemicals, metals, and fines. Proper procedures reduce or eliminate the contamination of stormwater runoff during concrete curing.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C23.1	Use proper storage and handling techniques for concrete curing compounds. Refer to C.26 Material Delivery and Storage BMPs.
<input checked="" type="checkbox"/>	C23.2	Protect drain inlets prior to the application of curing compounds.
<input checked="" type="checkbox"/>	C23.3	Refer to C.34 Spill Prevention and Control BMPs.
<input checked="" type="checkbox"/>	C23.4	Direct cure water away from inlets and watercourses to collection areas for infiltration or other means of removal in accordance with all applicable permits.
<input checked="" type="checkbox"/>	C23.5	Collect cure water at the top of slopes and transport or dispose of water in a non-erodible manner. Refer to C.4 Earth Dike and C.5 Temporary Drains and Swales BMPs.
<input checked="" type="checkbox"/>	C23.6	Utilize wet blankets or a similar method that maintains moisture while minimizing the use and possible discharge of water.
<input checked="" type="checkbox"/>	C23.7	Avoid overspray of the curing compound. Apply curing compound per manufacturer's recommended application rate and coverage.
<input checked="" type="checkbox"/>	C23.8	Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.
<input checked="" type="checkbox"/>	C23.9	Avoid or minimize applying curing compound in windy conditions. Maintain proper distance between sprayer tip and concrete surface to minimize dissipation of the curing compound due to wind.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M23.1	Inspect and verify that activity-based BMPs are in-place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
<input checked="" type="checkbox"/>	M23.2	Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
<input checked="" type="checkbox"/>	M23.3	Ensure that employees and subcontractors implement appropriate measures for storage, handling, and use of curing compounds.
<input checked="" type="checkbox"/>	M23.4	Inspect cure containers and spraying equipment for leaks.

6.0 MATERIAL AND WASTE MANAGEMENT POLLUTION CONTROL BMPS

6.1 C.26 Material Delivery and Storage

Description

Prevent or reduce the discharge of pollutants to stormwater from material delivery and storage by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees.

Limitations

Storage sheds often must meet building and fire code requirements.

Practice		
<input checked="" type="checkbox"/>	C26.1	Designate areas of the construction site for material delivery and storage. <ul style="list-style-type: none">• Locate storage areas near construction entrances, and away from storm drains and waterways.• Avoid transporting potential pollutants near drainage paths or waterways.• Surround storage areas for potential pollutants with earth berms or other approved containment devices.• Store potential pollutants in a paved area, if available.
<input checked="" type="checkbox"/>	C26.2	Store reactive, ignitable, or flammable liquids in compliance with the local fire codes. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. Refer to the Flammable and Combustible Liquid Code, National Fire Protection Association, NFPA 30.
<input checked="" type="checkbox"/>	C26.3	Keep an accurate, up-to-date inventory of materials used at work sites. <ul style="list-style-type: none">• Minimize onsite inventory.• Minimize storage of hazardous materials.• Store materials in covered area or under covering.
<input checked="" type="checkbox"/>	C26.4	Handle hazardous materials as infrequently as possible.
<input checked="" type="checkbox"/>	C26.5	Maintain SDS at the work site. Keep SDS at a designated location and ensure employees are knowledgeable of the location.
<input checked="" type="checkbox"/>	C26.6	Do not store material directly on the ground. Place materials on a pallet or dunnage, and when possible, in secondary containment.
<input checked="" type="checkbox"/>	C26.7	Store all liquid materials within secondary containment. Cover or store under cover.
<input checked="" type="checkbox"/>	C26.8	Provide secondary containment with adequate containment volume able to capture 100 percent of the capacity of the single largest container, if stored indoors, or 100 percent of the capacity of the single largest container plus the freeboard from the precipitation of a 25-year storm event, if stored outdoors.
<input checked="" type="checkbox"/>	C26.9	Ensure the secondary containment is free of accumulation of rainwater and spills, and covered or stored under cover. In the event of spills or leaks, accumulated rainwater and spill shall be collected and placed in appropriate containers. These liquids shall be considered hazardous waste unless testing determines them to be non-hazardous. Properly dispose or recycle all liquids according to federal, state, and local requirements.
<input checked="" type="checkbox"/>	C26.10	Store bagged and boxed materials on pallets or dunnage. Provide protection from wind, rain, and runoff. Store under cover or covered.
<input checked="" type="checkbox"/>	C26.11	Prevent contact with wind, rain, and runoff for powder-form materials such as cement. Check packaging and containers for damage, and immediately repair, replace, or remove from site.

C.26 Material Delivery and Storage (continued)

Practice		
<input checked="" type="checkbox"/>	C26.12	Store metal materials, such as reinforcing steel and dowels, on pallets or dunnage, and under cover, covered, or in containers to prevent contact with rain and runoff.
<input checked="" type="checkbox"/>	C26.13	If drums must be stored in an uncovered area, store them at a slight angle to reduce ponding of rainwater on the lids and reduce corrosion. Additionally, place within secondary containment.
<input checked="" type="checkbox"/>	C26.14	Keep chemicals in their original containers and well labeled. Labels shall be clearly and easily legible. Position container with label for easy access and viewing. Containers that are empty shall be labeled as "EMPTY." Containers with non-potable water shall be labeled as "Non-Potable Water."
<input checked="" type="checkbox"/>	C26.15	Provide sufficient separation between stored materials to allow for spill monitoring, spill cleanup, and emergency response access.
<input checked="" type="checkbox"/>	C26.16	Ensure that employees handling potential pollutants have received adequate training regarding the hazards and proper handling procedures for the materials.
<input checked="" type="checkbox"/>	C26.17	Train employees in emergency spill cleanup procedures are to be present when dangerous materials or liquid chemicals are unloaded.
<input checked="" type="checkbox"/>	C26.18	Ensure spill kits are to be readily available onsite at designated locations.
<input checked="" type="checkbox"/>	C26.19	If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.
<input checked="" type="checkbox"/>	C26.20	Materials are to be covered, enclosed, or in their sealed containers while being transported to and from the site, and on the site. Loads are to be properly secured to prevent tipping, shifting, or movement of the material during transport.
<input checked="" type="checkbox"/>	C26.21	Do not store material immediately abutting or on top of BMP measures and devices which could affect or prevent the performance and inspection of the BMP measure or device.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M26.1	Keep storage areas clean and well organized. Provide ample cleanup supplies for the various materials being stored.
<input checked="" type="checkbox"/>	M26.2	Inspect perimeter controls at the end of each workday. Repair any damages immediately.
<input checked="" type="checkbox"/>	M26.3	Inspect storage areas prior to an anticipated rainfall event and after the rainfall event.

6.2 C.27 Material Use

Description

Prevent or reduce the discharge of pollutants to stormwater from material use by using alternative products, minimizing hazardous material use onsite, and training employees in the proper handling and use of construction materials.

Limitations

- Alternative materials may not be available, suitable, or effective in every case.

Practice		
<input checked="" type="checkbox"/>	C27.1	Use less hazardous, alternative materials as much as possible.
<input checked="" type="checkbox"/>	C27.2	Minimize use of hazardous materials onsite. Buy recycled or less hazardous products to the maximum extent practicable.
<input checked="" type="checkbox"/>	C27.3	Use materials only where and when needed to complete the work.
<input checked="" type="checkbox"/>	C27.4	Follow manufacturer's instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals. Keep SDS at a designated location and ensure employees are knowledgeable of the location.
<input type="checkbox"/>	C27.5	Train personnel applying pesticides on their usage. The State Department of Agriculture, Pesticides Branch, licenses pesticide dealers, certifies pesticide applicators, and conducts onsite inspections.
<input checked="" type="checkbox"/>	C27.6	Do not over-apply fertilizers, herbicides, or pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmental harmful. Except on steep slopes, till fertilizer into the soil rather than surface spreading or spraying it. Apply surface dressings in several smaller applications, as opposed to one large application to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains.
<input checked="" type="checkbox"/>	C27.7	Maintain a log of amount, type, and locations where fertilizers, herbicides, or pesticides were applied as well as the BMPs utilized (refer to SWMPP Section E for more detailed chemical usage BMPs). These logs must be available onsite for review by DOTA inspectors.
<input checked="" type="checkbox"/>	C27.8	Train employees in proper material use.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M27.1	Spot check employees monthly to ensure proper practices are being performed.
<input checked="" type="checkbox"/>	M27.2	Ensure that the SDS are maintained for all chemicals used.

6.3 C.28 Protection of Stockpiles

Description

Stockpiles can be a significant source of erosion, sediment, and fugitive dust problems. Measures are to be taken to mitigate the potential for erosion of stockpiles.

Limitations

- Stockpiles are for temporary storage of material only. Provisions for permanent removal of stockpiled material must be in place.

Practice		
<input checked="" type="checkbox"/>	C28.1	Locate stockpiles a minimum of 50 feet, or as far as practicable, from waterways, drainage facilities, concentrated runoff, and outside of any natural buffers identified on the Stormwater Pollution Prevention Plan (SWPPP).
<input checked="" type="checkbox"/>	C28.2	Avoid sloping ground for locating stockpiles.
<input checked="" type="checkbox"/>	C28.3	Minimize stockpile height.
<input checked="" type="checkbox"/>	C28.4	Provide earth dikes or other physical diversion to protect stockpiles from runoff and run-on.
<input checked="" type="checkbox"/>	C28.5	Provide silt fences or other sediment control measures at the toe of the stock pile to mitigate runoff during rain events.
<input checked="" type="checkbox"/>	C28.6	Cover stockpiles with plastic, mulch, or provide other stabilization measures to protect from wind and prevent erosion during rain events.
<input checked="" type="checkbox"/>	C28.7	Provide adequate setback distance from lot lines.
<input checked="" type="checkbox"/>	C28.8	Provide sediment basins where required.
<input checked="" type="checkbox"/>	C28.9	Contain and securely protect stockpiles from the wind.
<input checked="" type="checkbox"/>	C28.10	Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or State waters.
<input checked="" type="checkbox"/>	C28.11	Provide drain inlet protection devices and/or perimeter sediment controls, as applicable.
<input checked="" type="checkbox"/>	C28.12	All measures (i.e., cover, sediment control measures) shall be in-place immediately upon creation of the stockpile and at all times that the stockpile is inactive. Inactive is defined as all times other than when addition to or removal of material to the stockpile is actively occurring. All measures shall be in-place by the end of each day or work shift.
<input checked="" type="checkbox"/>	C28.13	Physically separate the stockpiles and their stormwater controls from other stormwater controls that are implemented on the site.
<input checked="" type="checkbox"/>	C28.14	Ensure stockpiles, at any time and manner, shall not endanger traffic or shall not in any other way be detrimental to the completed work, health, or the operation of the airport.
Maintenance and Inspection		
<input checked="" type="checkbox"/>	M28.1	Maintain and inspect BMP measures according to the type(s) being used.

6.5 C.30 Solid Waste Management - Debris

Description

Prevent or reduce discharge of pollutants to the land, groundwater, and in stormwater from solid waste or C&D waste by providing designated waste collection areas, separate containers for recyclable waste materials, timing collection of waste and recyclable materials with each stage of the work, and properly training employees.

Limitations

- All waste debris and trash that can enter the AOA are Foreign Object Debris (FOD) and do not belong in or near aircrafts. FOD can result in injury to airport and airline personnel, and damage aircrafts. FOD-prevention is a major priority for safe airport operation.

Practice		
<input checked="" type="checkbox"/>	C30.1	Clean up materials contaminated with hazardous substances, friable asbestos, waste paint, solvents, sealers, adhesives, or similar materials are not acceptable at C&D disposal sites. Separate contaminated clean up materials from C&D Wastes.
<input checked="" type="checkbox"/>	C30.2	Place inert fill material such that it will not be subject to erosion from runoff. [Inert Fill Material is defined as earth, soil, rock, or rock-like material will not decompose or produce leachate]. Refer to C.28 Protection of Stockpiles for additional requirements.
<input checked="" type="checkbox"/>	C30.3	Recycle or reuse C&D waste whenever practical.
<input checked="" type="checkbox"/>	C30.4	Select designated waste collection areas onsite.
<input checked="" type="checkbox"/>	C30.5	Provide only watertight dumpsters. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
<input checked="" type="checkbox"/>	C30.6	Locate containers in a covered area and/or in a secondary containment. Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out and to prevent scattering of wastes by wind.
<input checked="" type="checkbox"/>	C30.7	Obtain additional containers and more frequent pickup during the demolition phase of a project.
<input checked="" type="checkbox"/>	C30.8	Collect site trash daily, especially during rainy and windy conditions.
<input checked="" type="checkbox"/>	C30.9	Dispose of trash into designated waste containers.
<input checked="" type="checkbox"/>	C30.10	Ensure that toxic wastes (used oils, solvent, and paints) and chemicals (acids, pesticides, additives, curing compound) are not disposed of in dumpsters designed for refuse or construction debris.
<input checked="" type="checkbox"/>	C30.11	Salvage or recycle any useful material. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Metal can be recycled.
<input checked="" type="checkbox"/>	C30.12	Provide waste containers of sufficient size and number to contain C&D waste. Containers shall be of good integrity with no holes.
<input checked="" type="checkbox"/>	C30.13	Schedule solid waste collection regularly. Empty waste containers weekly or when they are two-thirds full, whichever is sooner.
<input checked="" type="checkbox"/>	C30.14	Do not allow containers to overflow. Clean up immediately if they do.
<input checked="" type="checkbox"/>	C30.15	Do not hose out dumpsters on the construction site. Leave dumpster cleaning to trash hauling employees.

C.30 Solid Waste Management – Debris (continued)

Practice		
<input checked="" type="checkbox"/>	C30.16	Require haulers to cover truck beds and waste containers for dust suppression.
<input checked="" type="checkbox"/>	C30.17	Require truck beds to maintain at least two feet of freeboard for dust suppression.
<input checked="" type="checkbox"/>	C30.18	Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls, as applicable.
<input checked="" type="checkbox"/>	C30.19	For C&D waste, site clearing debris, or dredged soils, submit a Solid Waste Disclosure Form to the DOH Solid Waste Section. Provide a copy of this form to the DOTA Engineer.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M30.1	Inspect entire site for litter and debris on a daily basis.
<input checked="" type="checkbox"/>	M30.2	Inspect the construction waste and recycling areas regularly.
<input checked="" type="checkbox"/>	M30.3	Remove solid waste collected at the Erosion and sediment control devices promptly.
<input checked="" type="checkbox"/>	M30.4	If a container does spill, clean up immediately.
<input checked="" type="checkbox"/>	M30.5	Train employees in proper solid waste management.

6.7 C.32 Concrete Operation and Waste Management

Description

Prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employees. Concrete waste includes, but not limited to, concrete, mortar, plaster, stucco, and grout.

Concrete washout water is a slurry containing toxic metals. It is also caustic and corrosive, having a high pH.

Limitations

- Offsite washout of concrete wastes may not always be possible.

Practice		
<input checked="" type="checkbox"/>	C32.1	Store dry and wet material under cover, away from drainage area.
<input checked="" type="checkbox"/>	C32.2	Avoid mixing excess amounts of fresh concrete or cement onsite.
<input checked="" type="checkbox"/>	C32.3	Perform washout of concrete trucks offsite or in designated areas only. The Airport Manager and AIR-EE shall approve the location of wash area, including a plan on how the area will be cleaned up and the waste materials disposed.
<input checked="" type="checkbox"/>	C32.4	Do not wash concrete trucks into storm drains, open ditches, streets, or streams.
<input checked="" type="checkbox"/>	C32.5	Do not allow excess concrete to be dumped onsite, except in designated areas. AIR-EE and the Airport Manager shall approve the location of dump area, including a plan on how the area will be cleaned up and the waste materials disposed.
<input checked="" type="checkbox"/>	C32.6	For onsite washout: <ul style="list-style-type: none">• Locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste;• Line the washout with a minimum of 10 mil polyethylene sheeting that is free of holes, tears, or other defects that compromise the impermeability of the material. The seams of multiple sheets should be thoroughly adhered such that liquid wastes are contained.• Washout wastes into the temporary pit where the concrete can set, be broken up, and then disposed of properly.• Provide a minimum freeboard of 4 inches at the washout facilities to account for rain events.
<input checked="" type="checkbox"/>	C32.7	When sandblasting, avoid creating runoff by draining the water to a bermed or level area.
<input checked="" type="checkbox"/>	C32.8	Do not sweep excess exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile, or dispose in the trash.
<input checked="" type="checkbox"/>	C32.9	Train employees in proper concrete waste management.
<input checked="" type="checkbox"/>	C32.10	Collect wash water and all concrete waste/debris in a concrete washout system bin. Allow wash water to evaporate or properly disposed at an appropriate treatment facility. Allow concrete to harden, broken up, and, then, properly disposed.
<input checked="" type="checkbox"/>	C32.11	Do not dump liquid wastes into storm drainage system or ground.
<input checked="" type="checkbox"/>	C32.12	Follow requirements of C.28 Protection of Stockpiles when storing concrete solid waste onsite.

C.32 Concrete Operation and Waste Management (continued)

Practice		
<input checked="" type="checkbox"/>	C32.13	When heavy rains are forecasted, monitor the washout's liquid level. Cover the washout or pump out the liquid from the washout to avoid an overflow during the storm.
<input checked="" type="checkbox"/>	C32.14	Dispose of liquid and solid concrete wastes in compliance with the federal, state, and local standards. Refer to C.30 Solid Waste Management - Debris, for additional requirement for disposal and transportation, as applicable.
<input checked="" type="checkbox"/>	C32.15	If concrete involves an onsite batch plant, follow the stormwater permitting requirements for industrial activities. The Airport Manager must approve the location of the batch plant. Locate the batch plant away from drainage facilities and drain paths. Comply with applicable federal, state and local regulations.
<input checked="" type="checkbox"/>	C32.16	When saw-cutting concrete, collect the sawcut slurry and remove from the site by vacuuming. Avoid saw-cutting during wet weather. Cover or barricade storm drains during saw-cutting to contain slurry. Slurry may be placed in a temporary pit or container, as described in this section, to promote evaporation.
<input checked="" type="checkbox"/>	C32.17	Wastewater from mortar, plaster, stucco, and grout shall not be allowed to flow into drainage structures or surface waters. Direct all waters to a leak-proof pit or container, as described in this section.
<input checked="" type="checkbox"/>	C32.18	Remove and properly dispose any significant residual material from concrete, mortar, plaster, stucco, and grout remaining on the ground after the completion of construction. If the residual materials contaminate the soil, then, the contaminated soil shall also be removed and properly disposed.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M32.1	Inspect concrete washout facilities after heavy rains and at the end of each workweek. Repair any damages before the next time it is used.
<input checked="" type="checkbox"/>	M32.2	Cleanout the facility or construct a new one when it reaches 75 percent capacity or 4 inches of freeboard.

6.8 C.33 Sanitary/Septic Waste Management

Description

Prevent or reduce the discharge of pollutants to stormwater from sanitary/septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C33.1	Locate sanitary facilities in a convenient location, away from drainage facilities, open ditches and water bodies.
<input checked="" type="checkbox"/>	C33.2	Never discharge untreated wastewater to the ground.
<input checked="" type="checkbox"/>	C33.3	If using an onsite disposal system, such as a septic system, comply with DOH requirements.
<input checked="" type="checkbox"/>	C33.4	Temporary sanitary facilities that discharge to the sanitary sewer system are to be properly connected to avoid illicit discharges.
<input checked="" type="checkbox"/>	C33.5	If discharging to the sanitary sewer, contact the local wastewater treatment plant for their requirements.
<input checked="" type="checkbox"/>	C33.6	Provide sufficient number of sanitary facilities based upon size of labor work force and usage.
<input checked="" type="checkbox"/>	C33.7	Arrange for regular waste collection by a licensed transporter before facilities overflow.
<input type="checkbox"/>	C33.8	Ensure that the triturator training is completed prior to using DOTA triturator. Contact AIR-EE for information regarding the training.
<input checked="" type="checkbox"/>	C33.9	Position sanitary facilities so they are secure and will not be tipped over or knocked down.
<input checked="" type="checkbox"/>	C33.10	When servicing facility, prevent spill of cleaning solutions, cleaning wastewater, and sanitary waste.
<input checked="" type="checkbox"/>	C33.11	Clean up spill immediately. For sanitary waste spill, disinfect area of spill after clean up. Do not over-apply disinfectant and prevent from discharging to drainage system, open ditches, and waters bodies.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M33.1	Inspect sanitary/septic waste storage facility at the end of each workweek.
<input checked="" type="checkbox"/>	M33.2	Monitor disposal operations for spills.
<input checked="" type="checkbox"/>	M33.3	Maintain sanitary/septic facilities in good working order using a licensed service provider.

6.9 C.34 Spill Prevention and Control

Description

Prevent or reduce the discharge of pollutants to stormwater from leaks and spills by reducing the chance of spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spilled materials, and training employees.

Report all spills to the Airport Duty Manager (For HNL, Code 22) and AIR-EE. Small spills of oil (less than 25 gallons) which are capable of being cleaned up within 72 hours and which do not threaten ground or surface waters can be cleaned up using absorbent materials or other acceptable practices. Daily inspections of the facility will identify any small spills, which will be addressed immediately.

In the event of a large or uncontrolled release, the Construction Manager shall act as the Emergency Coordinator (EC) until the Airport Manager or his representative assumes the role of the EC.

If necessary, use a private spill cleanup company.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C34.1	Store hazardous materials and wastes in covered containers or in a covered area, within secondary containment and protected from vandalism.
<input checked="" type="checkbox"/>	C34.2	Place a stockpile of spill cleanup materials where it will be readily accessible.
<input checked="" type="checkbox"/>	C34.3	Train employees in spill prevention and cleanup.
<input checked="" type="checkbox"/>	C34.4	Designate responsible individuals.
<input checked="" type="checkbox"/>	C34.5	Review spill response requirements at each work site.
<input checked="" type="checkbox"/>	C34.6	Clean up leaks and spills immediately.
<input checked="" type="checkbox"/>	C34.7	On paved surfaces, clean up the spill with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous.
<input checked="" type="checkbox"/>	C34.8	Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. Refer to C.30 Solid Waste Management -Debris for BMPs.
<input checked="" type="checkbox"/>	C34.9	Report significant spills to the United States (U.S.) Coast Guard, DOH HEER Office, and City and County of agencies, such as the Fire Department; they can assist in cleanup.
<input checked="" type="checkbox"/>	C34.10	Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the NRC at (800) 424-8802 (24 hours). Notify DOH CWB at (808) 586-4309 and AIR-EE at (808) 838-8656 if the spill reached storm drains.
<input checked="" type="checkbox"/>	C34.11	If repair or maintenance must occur onsite, refer to C.22 Vehicle and Equipment Operation and Maintenance BMPs.
<input checked="" type="checkbox"/>	C34.12	Place drip pans or absorbent materials under all equipment when not in use.
<input checked="" type="checkbox"/>	C34.13	Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
<input checked="" type="checkbox"/>	C34.14	Transfer used fluids to the proper waste or recycling drums promptly. Don't leave full drip pans or other open containers lying around.

C.34 Spill Prevention and Control (continued)

Practice		
<input type="checkbox"/>	C34.15	Oil filter disposed of in trash cans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Recycle oil filters if this service is available.
<input type="checkbox"/>	C34.16	Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if all the acid appears to be drained out. If a battery is dropped, treat it as if it is cracked. Put it into the containment area until it is assured not to be leaking.
<input checked="" type="checkbox"/>	C34.17	If fueling must occur onsite, refer to C.21 Vehicle and Equipment Refueling BMPs.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M34.1	Ensure that the spill cleanup materials are fully stocked at the beginning of each workday.
<input checked="" type="checkbox"/>	M34.2	Remove any products and fluid collected in drip pans or other secondary containment devices promptly.
<input checked="" type="checkbox"/>	M34.3	Implement mandatory monthly Good Housekeeping/BMP refresher classes for employees.

6.10 C.35 Spill Response Practices

Description

Proper control and cleanup of spilled hazardous materials reduces the discharge of hazardous materials to MS4. This BMP covers hazardous material spills in the DOTA right-of-way by DOTA and contract personnel. The Maintenance Baseyard and tenant facility stormwater pollution control plans will also contain information about spills in their respective areas.

Report all spills to the Airport Duty Manager and AIR-EE. Small spills of oil (less than 25 gallons) which are capable of being cleaned up within 72 hours and which do not threaten ground or surface waters can be cleaned up using absorbent materials or other acceptable practices. Daily inspections of the facility will identify any small spills, which will be addressed immediately.

In the event of a large or uncontrolled release, the Construction Manager shall act as the EC until the Airport Manager or his representative assumes the role of EC.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C35.1	Stop work.
<input checked="" type="checkbox"/>	C35.2	Shut down pumps and equipment and secure valves and work operations.
<input checked="" type="checkbox"/>	C35.3	Shut down any nearby propane tanks.
<input checked="" type="checkbox"/>	C35.4	Move away from the affected area.
<input checked="" type="checkbox"/>	C35.5	Notify and alert others of the incident via: (1) voice; (2) hand-held radios; and/or (3) other effective communication.
<input checked="" type="checkbox"/>	C35.6	Keep non-essential employees away from the spill area.
<input checked="" type="checkbox"/>	C35.7	Notify the EC.
<input checked="" type="checkbox"/>	C35.8	<p>The Emergency Coordinator shall evaluate the situation and decide whether to implement a “fight or flight” response by gathering the following information, if it can be done safely:</p> <ul style="list-style-type: none">• Your name, location, and how you may be reached.• Location of the release.• Type, quantity, and description of the release.• Hazards of the release.• Type of media affected (soil, asphalt, concrete, etc.).• Rate of the release.• Migratory direction of the release.• Potential for fire or explosion.• Potential for human exposure.• Potential for migration to surface water (ocean, storm drains, etc.).
<input checked="" type="checkbox"/>	C35.9	Never subject yourself or other personnel to unreasonable risk of illness or injury.

C.35 Spill Response Practices (continued)

Practice		
<input checked="" type="checkbox"/>	C35.10	Remove all injured persons from the immediate area of danger and render first aid. If injuries are severe, call 911 for emergency medical assistance.
<input checked="" type="checkbox"/>	C35.11	If the decision is to “fight,” spill response personnel are to don the appropriate personal protective equipment (PPE).
<input checked="" type="checkbox"/>	C35.12	Eliminate all possible sources of ignition/detonation such as vehicle engines, welding and grinding operations, and smoking.
<input checked="" type="checkbox"/>	C35.13	Remove or isolate ignitable and incompatible materials from the area of the release.
<input checked="" type="checkbox"/>	C35.14	Locate, stop, and contain the source of the release by: (1) closing, checking, repairing, plugging valves; and/or (2) plugging and patching holes.
<input checked="" type="checkbox"/>	C35.15	Confine the release to prevent further migration by: <ol style="list-style-type: none"> 1) Diking and berming using sand, soil, or other inert material; 2) Sealing storm drains with plastic and sandbags; 3) Placing granular sorbent or absorbent pads and booms; 4) Diverting the chemicals from entering drains, manholes, streams, etc.; or 5) Implementing retention techniques.
<input checked="" type="checkbox"/>	C35.16	Implement proper decontamination procedures on vehicles, affected media, PPE, and equipment. This may include placing absorbent material on oil stained pavement - later sweeping up, removing and disposing of affected media (soil or loose asphalt) that contains contaminant, and/or berming the spill area and scrubbing using detergents – disposing detergent and rinse in accordance with the procedures listed below.
<input checked="" type="checkbox"/>	C35.17	All used decontamination solution, disposable PPE and affected media must be properly packaged in U.S. Department of Transportation (DOT) specified containers.
<input checked="" type="checkbox"/>	C35.18	Labeling, transportation and subsequent disposal of hazardous materials/waste must be in accordance with applicable government regulations.
<input checked="" type="checkbox"/>	C35.19	If needed, call the spill response contractor for cleanup and removal of accumulated product resulting from the release. The contractor will remove spilled product and properly dispose of the material in accordance with applicable state and federal regulations.
<input checked="" type="checkbox"/>	C35.20	If the release is not readily and easily controlled, evacuation may be necessary.
<input checked="" type="checkbox"/>	C35.21	If the EC decides on the “flight” option, the EC is to immediately alert and evacuate all personnel.
<input checked="" type="checkbox"/>	C35.22	Call the necessary emergency service providers such as Code 22, 911 (medical facilities, County police, County fire), U.S. Coast Guard (842-2606), DOH HEER office (586-4249), NRC (800) 424-8802, Clean Islands Council (536-5814), and/or spill response contractors and vendors. Also notify the AIR-EE Supervisor (838-8656) in the event of large spills or spills that either enter the storm drain, canal, or ocean.
<input checked="" type="checkbox"/>	C35.23	Immediately report spills of a certain size (volume of greater than 25 gallons of oil, or any volume not contained and remediated within 72 hours) per HAR 11-451 to DOH HEER and the NRC immediately. Comply with the DOH HEER requirements. A written report shall be provided to DOH HEER within 30 calendar days of a Reportable Quantity spill cleanup. Provide copies of the written report to DOTA Engineer and AIR-EE.

C.35 Spill Response Practices
(continued)

Practice		
<input checked="" type="checkbox"/>	C35.24	Immediately report any spills reaching the storm drains to DOH CWB at (808) 586-4309. Comply with the DOH CWB requirements. A written report shall be provided to DOH CWB within 5 calendar days of a spill cleanup. Provide copies of the written report to DOTA Engineer and AIR-EE.
<input checked="" type="checkbox"/>	C35.25	Maintenance personnel are to proceed along an evacuation route to the nearest unaffected area.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M35.1	Implement spill response drills on a monthly basis specific to each employee's type of work and materials and equipment used.

6.11 C.36 Management of Materials Associated with Paint

Description

Prevent or reduce the discharge of pollutants to stormwater and to the land from materials associated with paint through proper material use, waste disposal, and training of employees.

Limitations

None.

Practice		
<input checked="" type="checkbox"/>	C36.1	Use proper storage and handling techniques for paint, solvents, and epoxy materials and supplies. Refer to C.26, Material Delivery and Storage BMPs.
<input checked="" type="checkbox"/>	C36.2	Store paint, solvents, and epoxy compounds in original water-tight containers over secondary containment and well-labeled. Retain a complete set of SDS onsite.
<input checked="" type="checkbox"/>	C36.3	Mix and clean paints and instruments in a covered and contained area, over secondary containment, when possible to minimize adverse impacts from spill.
<input checked="" type="checkbox"/>	C36.4	Painting areas should be contained so that drips are easily cleaned.
<input checked="" type="checkbox"/>	C36.5	When applying paint by spray, avoid over-spraying of paint. Apply paint per manufacturer's recommended application rate and coverage. Avoid or minimize applying paint in windy conditions. Maintain proper distance between sprayer tip and surface to minimize dissipation of the paint due to wind. Apply paint with brush or roller, if possible.
<input checked="" type="checkbox"/>	C36.6	Do not apply traffic paint or thermoplastic if rain is forecasted. Minimize excessive spreading or over-application of beads when applied manually to the surface of the thermoplastic.
<input checked="" type="checkbox"/>	C36.7	When painting operation is completed, clean brushes and other instruments by "painting out" brushes as much as possible or scraping off the excess paint. Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream.
<input checked="" type="checkbox"/>	C36.8	For water-based paints, wash brush and other instruments in a bucket and dispose of wash water into the sanitary sewer, where possible. If not, collect all wash water into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.
<input checked="" type="checkbox"/>	C36.9	Designate and locate onsite wash area a minimum of 50 feet or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.
<input checked="" type="checkbox"/>	C36.10	Do not dump liquid wastes into the storm drainage system.
<input checked="" type="checkbox"/>	C36.11	Oil-based paints and residue are hazardous waste. Ensure collection, removal, disposal of hazardous waste complies with regulations.
<input checked="" type="checkbox"/>	C36.12	Dispose containers only after all of the product has been used. Except for oil-based paints, all other paints can be disposed by drying, bagging, and placing with general rubbish.
<input checked="" type="checkbox"/>	C36.13	Filter and re-use thinners and solvents.
<input checked="" type="checkbox"/>	C36.14	Properly store and dispose waste materials generated from painting and structure repair and construction activities.
<input checked="" type="checkbox"/>	C36.15	Immediately clean up spills and leaks. Keep an ample supply of spill cleanup materials where they are readily accessible. Do not clean surfaces or spills by hosing the area. Eliminate the source of the spill to prevent discharge or a furtherance of an ongoing discharge.

C.36 Spill Management of Materials Associated with Paint
(continued)

Practice		
<input checked="" type="checkbox"/>	C36.16	Refer to C.34 Spill Prevention and Control BMPs.
<input checked="" type="checkbox"/>	C36.17	Train employees in proper hazardous waste management and spill response.

Maintenance and Inspection		
<input checked="" type="checkbox"/>	M36.1	Inspect containers, equipment, and containment facilities for leaks.

Attachment F

Spill Response

INSTRUCTIONS

- *Download and insert the applicable airport Spill Reporting Fact Sheet and Spill Reporting Form at <https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>*
 - *[Link to the DOT Airports – Spill Reporting Form](#)*
- *All spill shall be immediately reported to the AIR-EE, the State Project Manager, and those listed on the Spill Reporting Fact Sheet for the specific airport.*

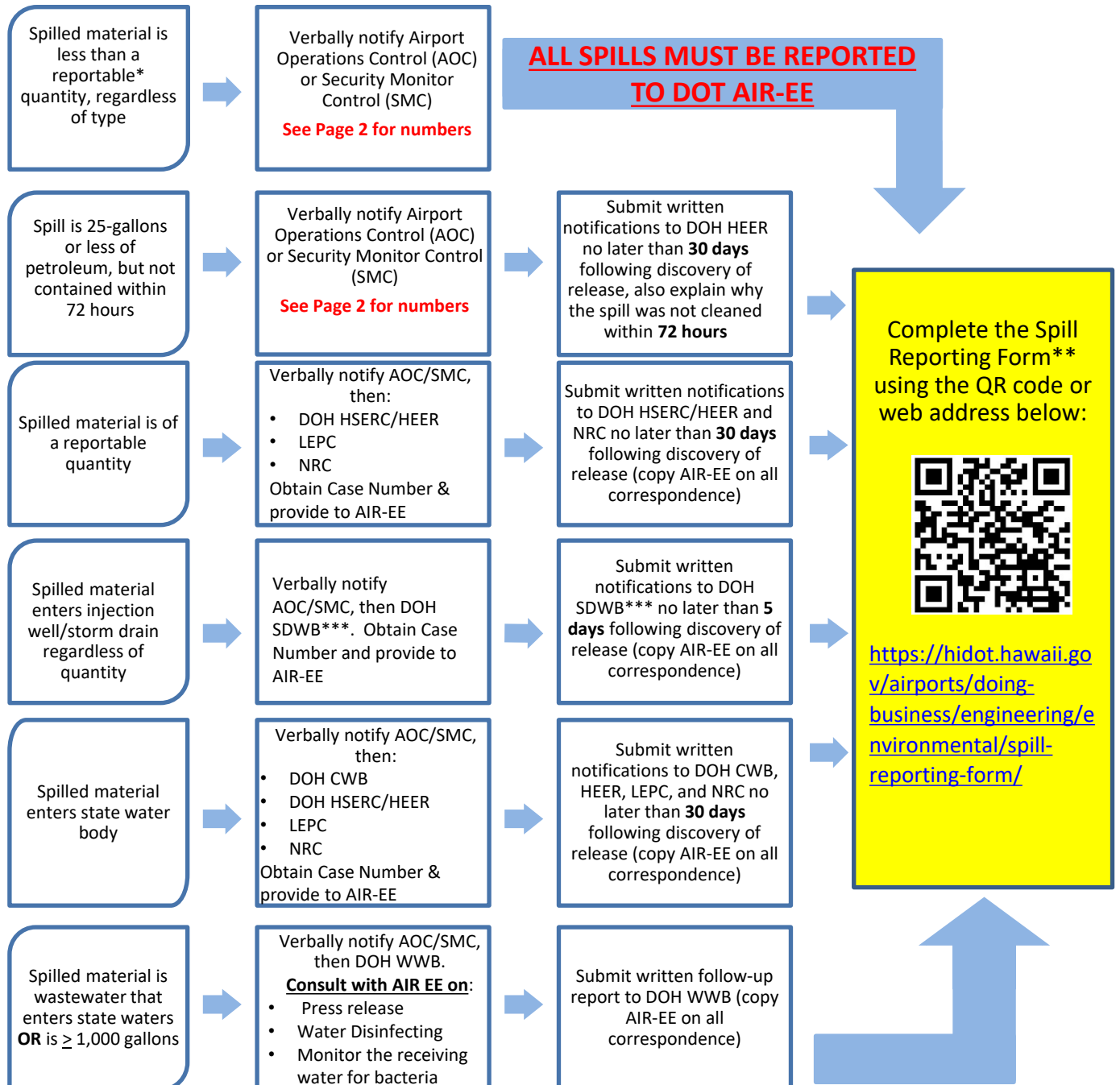
SPILL REPORTING

Ellison Onizuka Kona International and Hilo International Airport

FACT
SHEET



Each row below is a scenario and multiple scenarios may apply to a single spill event. Please review all scenarios!
Contact information is listed on the next page.



*See Reporting Procedures on page 2 for definition of "reportable".

**A pdf version of the Spill Reporting Form can be provided by emailing AIR-EE.

***The permit holder of the UIC must notify SDWB. Therefore, if it is a spill into a DOTA UIC well, AIR-EE will notify SDWB.

SPILL REPORTING

Ellison Onizuka Kona International and Hilo International Airport

FACT
SHEET



REPORTING PROCEDURES

Materials used and stored at the tenant facility have the potential to spill and contaminate stormwater runoff and surface water bodies. The procedures outlined in this fact sheet are intended to detail general procedures to be followed in the event of a spill. Please see all current state and federal guidelines for complete details.



Spills **must be immediately reported** per DOH and/or Federal requirements (Airports has additional requirements) if one or more of the following conditions apply:

1. If the release is more than 25-gallons of petroleum product.
2. If the release is 25-gallons or less of petroleum product but is not contained or remedied within 72 hours.
3. If the release **is equal to or exceeds the reportable quantity criteria** for one or more chemicals listed within the DOH HEER Office Technical Guidance Manual (TGM): <http://www.hawaiidoh.org/tgm-pdfs/TGM%20Section%2002-D.pdf>.
4. If the release enters a state water body or an underground injection control well

CONTACT INFORMATION

In the event a spill occurs, the contact information for pertinent personnel and agencies listed below are intended to be used for reference during the necessary reporting procedures detailed on Page 1.

<i>Personnel or Agency</i>	<i>Contact Information</i>
Security Monitor Control (SMC)* (Hilo) Airport Operations Control (AOC)* (Kona)	Phone: (808) 961-9308 Phone: (808) 329-1083
Airport Rescue and Firefighting (Hilo) Airport Rescue and Firefighting (Kona)	Phone: (808) 961-9317 Phone: (808) 327-9503
Hawaii State Emergency Response Commission (HSERC) / DOH Hazard Evaluation and Emergency Response (HEER)	Phone: (808) 586-4249 Phone: (808) 236-8200 after hours
DOT Airports Environmental Hotline	Phone: (808) 838-8002
DOT Airports Environmental Section (AIR-EE)*	Phone: (808) 327-4653 Email: stefan.borduz@hawaii.gov or dot.air.environmental@hawaii.gov
Local Emergency Planning Committee (LEPC)	Phone: (808) 936-8181 or 911 after hours
National Response Center (NRC)	Phone: (800) 424-8802
DOH Safe Drinking Water Branch (SDWB)	Phone: (808) 933-0407 (Hilo) or (808) 586-4258 or (808) 247-2191 after hours
DOH Clean Water Branch (CWB)	Phone: (808) 586-4309
DOH Wastewater Branch (WWB)	Phone: (808) 586-4294

***Should be notified for ALL spills regardless of quantity or type.**

Note: Written notifications must be provided per the reporting procedures detailed on Page 1, and must include verbal notification information, photos, and any other related information not previously provided. The written notification may be provided via certified mail, fax, hand-delivery, or other means that provides proof of delivery.

Attachment G

Inspection Reports

INSTRUCTIONS

- *Use the Construction Inspection Checklist or similar forms to document required onsite inspections.*
- *For inspections conducted by AIR-EE's inspectors, submit corrective action documentation to the inspector. If corrective action photos are requested, be sure they are taken from the same angle and location as the photos included in the inspector's Checklist.*
- *Document Retention: File completed AIR-EE inspection reports and Contractor's self-inspection reports in this Attachment G, or file in location specified in SWPPP Section 3.1.*
- *Templates of the above and forms are available at: <http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>*



CONSTRUCTION INSPECTION CHECKLIST



Project Name: _____	
Date: _____	Start / End Time: _____
Project No.: _____	NPDES Permit # (if any): _____
Name of Inspector's Firm: _____	
Name of Inspector: _____	Phone Number: _____
On-site Representative: _____	Phone Number: _____
Weather Conditions: _____	
Type of Inspection (check one): <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Follow-up <input type="checkbox"/> Other: _____	

Inspection Items		Yes	No	N/A	Comments
1.	Are previously noted deficiencies corrected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Is there approval to connect to the MS4 and/or make changes to the storm drain system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are the applicable regulatory permits and updated SWPPP available on-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are personnel at the site aware of applicable BMPs and the location of the BMP Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are contractor self-inspections performed as required in HAR 11-55, App C or at least every 7 days?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Are spill kits available on-site and spills promptly removed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Are all slopes and disturbed areas not actively being worked properly stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Are discharge points and receiving waters free of any sediment deposits or other signs of illicit discharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Are storm drain inlets and waterways properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.	Is the construction exit preventing sediment from being tracked into the street?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.	Is trash/litter from work areas collected and placed in covered dumpsters?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.	Are proper washout facilities (i.e. paint, concrete) available, clearly marked, and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or other deleterious material?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16.	Are non-stormwater discharges (i.e. wash water, dewatering) properly controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



CONSTRUCTION INSPECTION CHECKLIST



List BMPs from the SWPPP and whether they are properly implemented and maintained.

BMP		Implemented		Maintained		Comments
		Yes	No	Yes	No	
1.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Comments:						

*Use additional paper if the number of BMPs exceeds the space allotted.



CONSTRUCTION INSPECTION CHECKLIST



<i>Description of Potential Non-Compliance:</i>				
<u>No.</u>	<u>Description</u>	<u>Photo No.</u>	<u>Deficiency Type</u>	<u>Follow-up Date</u>

NOTE: Descriptions of deficiency types may be found in Table 2 of the HNL Stormwater Management Program Plan Section C.4.4

Check box if:

☐

No incidents of potential non-compliance were found, and I certify that this inspection found this site to be in full compliance with both the Stormwater Management Program Plan and applicable permits. All items must be checked "Yes" to be considered in full compliance.

☐

Incidents of potential non-compliance were found and discussed with Site Manager. If any items were checked "No" then this box must be checked. Document any incidences of non-compliance with photograph(s) and description of the non-compliance(s).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print Name: _____

Signature: _____

Date: _____



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Project Name:	
Date:	Start / End Time:
Project No.:	NPDES Permit # (if any):
Inspection Company:	
Inspector:	Phone Number:
Construction Management Company / Tenant:	
CM / Tenant Representative:	Phone Number:
Contractor Company:	
Contractor's Representative:	Phone Number:
Weather Conditions:	
Check One: <input type="checkbox"/> HNL SWMPP, DOTA <input type="checkbox"/> OGG SWMPP, DOTA <input type="checkbox"/> Non-Permitted Airport, DOTA <input type="checkbox"/> HNL SWMPP, TIP <input type="checkbox"/> OGG SWMPP, TIP <input type="checkbox"/> Non-Permitted Airport, TIP <input type="checkbox"/> Other:	

Inspection Items		Yes	No	N/A	Comments
REGULATORY PERMITS:					
1.	Is the Project greater than one (1) acre? This includes the project limits area and areas of construction support activities. a. If yes, has all the requirements of the NGPC Permit from the DOH been satisfactorily met?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Have all requirements of applicable regulatory permits been completed and the permits closed? (i.e. Building, Grading, Army Permit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Have all the contractor's self-performed inspection reports as required in HAR 11-55 been submitted to the DOTA SPM or DOTA AIR-EE?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Was there approval to connect to the MS4 and/or make changes to the storm drain system? (i.e. Permit to Discharge into State Airport Drainage System) a. Have these been properly completed in compliance with the Construction Contract Documents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Other, be specific.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
TEMPORARY BMP MEASURES CHECKLIST					
6.	Are Dust Control Measures (i.e. dust screens) properly constructed? (Reference Construction Activities BMP Field Manual C.6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Are all perimeter controls and sediment barriers installed and adequately constructed (keyed into substrate)? (Reference Construction Activities BMP Field Manual C.10, C.11, C.14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are all storm drain inlets, catch basins, and manholes identified and adequately protected? (Reference Construction Activities BMP Field Manual C.12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	a. Within Project Limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	b. Beyond Project Limits, receiving stormwater runoff from project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Are Sediment Detention Basin and Sediment Traps properly constructed and maintained? (Reference Construction Activities BMP Field Manual C.13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Are the construction entrance/exits properly constructed and stabilized? (Reference Construction Activities BMP Field Manual C.15 and C.16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.	Are Sanitary and Septic Waste Facilities properly secured to prevent "tipping?"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.	Are Spill Kits available on-site at designated locations? (Reference Construction Activities BMP Field Manual C.31)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.	Are discharge points and receiving waters free of any sediment deposits or other signs of illicit discharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	Other, be specific	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TEMPORARY STAGING & STORAGE FACILITIES					
16.	Have all Dewatering Operation Facilities been removed and the site properly restored and permanently stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17.	Have all Vehicle and Equipment Fueling, Cleaning and Maintenance Areas been cleaned, restored and properly stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18.	Have all Material Storage Areas been properly cleaned, restored and properly stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
TEMPORARY STAGING & STORAGE FACILITIES					
19.	Trash and Solid Waste Collection Areas. (Reference Construction Activities BMP Field Manual C.27) a. Do the trash containers have covers? b. Are the trash containers watertight?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
20.	Were contaminated soils encountered during construction? a. Have all contaminated soils been properly disposed? Were records provided? b. Have all contaminated soil stockpile areas been properly cleaned, restored and permanently stabilized?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
21.	Have all Concrete Washout Facilities been cleaned and removed? a. Have the areas been properly restored and permanently stabilized?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
22.	Have Non-Stormwater Washout Facilities (i.e. paint, hand wash) been removed and the area properly restored and permanently stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23.	Have all temporary contractor's storage and staging areas, including areas beyond the project limits, been properly restored and permanently stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24.	Other, be specific	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PERMANENT BMP MEASURES CHECKLIST					
26.	Have all impervious surfaces, such as sidewalks and pavements, been constructed in compliance to the Construction Contract Documents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27.	Is the new Drainage System completed in compliance to the Construction Contract Documents? a. Are all runoff waters flowing according to Construction Contract Documents? b. Are permanent drain inlet protection properly installed, functioning, and maintained?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
28.	Have all permanent Plants and Grass been installed? a. Do the Plants and Grass meet the requirements of Plant Establishment and exhibit healthy growth? b. Is the permanent irrigation system for the plants and grass functioning properly?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
29.	Have all permanent Mats and/or Erosion Control Blankets been properly installed according to the DOTA's Stormwater Permanent BMP Manual and Manufacturer's recommended procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30.	Have all exposed and/or previously disturbed areas been permanently stabilized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
PERMANENT BMP MEASURES CHECKLIST					
31.	Does the vegetation that existed on areas of the site where no construction activity occurred still exhibit similar health and growth as observed prior to the commencement of construction activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32.	<p>This Project consists of the following Design Facilities and Structures for Stormwater Source Control:</p> <ul style="list-style-type: none"> a. Fueling Area Design (Permanent BMP Manual Section PC26) b. Maintenance Area Design (Permanent BMP Manual Section PC27) c. Washing Area Design (Permanent BMP Manual Section PC28) d. Loading Area Design (Permanent BMP Manual Section PC29) e. Waste Management Area Design (Permanent BMP Manual Section PC30) f. Material Storage Area Design (Permanent BMP Manual Section PC31) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33.	<p>This Project consists of the following Permanent BMP Facilities and Structures for Stormwater Treatment.</p> <ul style="list-style-type: none"> a. Mulching (Permanent BMP Manual Section PC3) b. Earth Dikes, Drainage Swales, and Lined Ditches (Permanent BMP Manual Section PC6) c. Slope Drains and Subsurface Drains (Permanent BMP Manual Section PC7) d. Slope Diversion Ditches and/or Berms (Permanent BMP Manual Section PC7) e. Top and Toe of Slope Diversion Ditches/Berms (Permanent BMP Manual Section PC8) f. Outlet Protection / Velocity Dissipation Devices (Permanent BMP Manual Section PC9) g. Flared Culvert End Sections (Permanent BMP Manual Section PC10) h. Slope Roughening / Terracing / Rounding (Permanent BMP Manual Section PC11) i. Level Spreader (Permanent BMP Manual Section PC12) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
PERMANENT BMP MEASURES CHECKLIST					
	Permanent BMP Facilities and Structures for Stormwater Treatment. (continue)				
	j. Infiltration Trench (Permanent BMP Manual Section PC13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	k. Retention Basin (Permanent BMP Manual Section PC14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	l. Green Roofs (Permanent BMP Manual Section PC15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	m. Alternative Wetlands (Permanent BMP Manual Section PC16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	n. Green Parking (Permanent BMP Manual Section PC17)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	o. Alternative Pavers (Permanent BMP Manual Section PC16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	p. BioRetention (Rain Gardens) (Permanent BMP Manual Section PC19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	q. Sand Filters (Permanent BMP Manual Section PC20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	r. Oil Water Separator (Permanent BMP Manual Section PC21)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	s. Continuous Deflective Separation (CDS) (Permanent BMP Manual Section PC22)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	t. Underground Detention Basin (Permanent BMP Manual Section PC24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	u. Stormwater Re-Use (Permanent BMP Manual Section PC25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34.	Have all applicable PBMP Operations & Maintenance Plans been provided to DOTA? a. Are maintenance personnel trained and is maintenance scheduled appropriately?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
35.	Other, be specific	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
36.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
37.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



FINAL CONSTRUCTION & POST-CONSTRUCTION BMP INITIAL INSPECTION CHECKLIST



Description of Potential Non-Compliance:				
No.	Description	Photo No.	Deficiency Type	Follow-up Date

Note: Description of deficiency types may be found in Table 2 of the HNL Stormwater Management Program Plan, Section C.4.4.

Check box if:

- ☐ No incidents of potential non-compliance were found, and I certify that this inspection found this site to be in full compliance with both the Stormwater Management Program Plan and applicable permits. All items must be checked "Yes" to be considered in full compliance. *(Site is ready for removal of temporary BMP measures and closure of site.)*
- ☐ Incidents of potential non-compliance were found and discussed with Site Manager. If any items were checked "No" then this box must be checked. Document any incidences of non-compliance with photograph(s) and description of the non-compliance(s). *(All non-compliance issues must be corrected and documented. Temporary BMP measures must remain until all post-construction BMPs have been completed and accepted.)*

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print Name: _____

Signature: _____

Date: _____



INITIAL CONSTRUCTION INSPECTION CHECKLIST



Project Name:	
Date:	Start / End Time:
Project No.:	NPDES Permit # (if any):
Inspection Company: _____	
Inspector:	Phone Number:
Construction Management Company / Tenant:	
CM / Tenant Representative:	Phone Number:
Contractor Company:	
Contractor's Representative:	Phone Number:
Weather Conditions:	
Check One: <input type="checkbox"/> HNL SWMPP, DOTA <input type="checkbox"/> OGG SWMPP, DOTA <input type="checkbox"/> Non-Permitted Airport, DOTA <input type="checkbox"/> HNL SWMPP, TIP <input type="checkbox"/> OGG SWMPP, TIP <input type="checkbox"/> Non-Permitted Airport, TIP <input type="checkbox"/> Other:	

Inspection Items		Yes	No	N/A	Comments
1.	Is the Project greater than one (1) acre? This includes the project limits area and areas of construction support activities. a. If yes, has an NGPC Permit from the DOH been obtained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Has the Contractor's SWPPP/SSBMP been submitted and approved by DOTA? a. Has a copy been provided to AIR-EE?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are the applicable regulatory permits (i.e. NGPC, Army Permit) and updated SWPPP available on-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are personnel at the site aware of applicable BMPs and the location of the BMP Plan? a. Is a record of completion of the BMP training retained on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are contractor self-inspections performed as required in HAR 11-55, App C or at least every 7 days? a. Has a rain gauge been properly installed and included in the Contractor's SWPPP? Or, identify the Contractor's source for weather station readings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Is there approval to connect to the MS4 and/or make changes to the storm drain system? (i.e. Permit to Discharge into State Airport Drainage System)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Dewatering Operations (Reference Construction Activities BMP Field Manual C.17) a. Has a NOI-G been submitted to DOH, and DOH issued a NGPC Permit? b. Are Dewatering Facilities located at designated areas and properly constructed and protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



INITIAL CONSTRUCTION INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
	BMP MEASURES CHECKLIST				
8.	HydroTesting Waters a. Has a NOI-F been submitted to DOH, and DOH issued a NGPC Permit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Are Dust Control Measures (i.e. dust screens) properly constructed? (Reference Construction Activities BMP Field Manual C.6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Are all perimeter controls and sediment barriers installed and adequately constructed (keyed into substrate)? (Reference Construction Activities BMP Field Manual C.10, C.11, C.14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11.	Are all storm drain inlets, catch basins, and manholes identified and adequately protected? (Reference Construction Activities BMP Field Manual C.12) a. Within Project Limits. b. Beyond Project Limits, receiving stormwater runoff from project site.	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
12.	Are Sediment Detention Basin and Sediment Traps properly constructed? (Reference Construction Activities BMP Field Manual C.13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13.	Are the construction entrance/exits properly located at designated areas, constructed and stabilized? (Reference Construction Activities BMP Field Manual C.15 and C.16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14.	Are Vehicle and Equipment Fueling, Cleaning and Maintenance Areas located at designated areas and properly constructed and protected? (Reference Construction Activities BMP Field Manual C.20, C.21, C.22)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.	Are Material Storage Areas properly located at designated areas and properly protected? (Reference Construction Activities BMP Field Manual C.23) a. Are Material Storage Areas covered? b. Are Material Storage Areas surrounded by earth berm or other approved containment devices? c. For liquid chemicals and waste, are secondary containment facilities available?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
16.	Are trash and solid waste collection areas properly located at designated areas? (Reference Construction Activities BMP Field Manual C.27) a. Do the trash containers have covers? b. Are the trash containers watertight?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	



INITIAL CONSTRUCTION INSPECTION CHECKLIST



Inspection Items		Yes	No	N/A	Comments
	BMP MEASURES CHECKLIST				
17.	If contaminated soils are anticipated to be encountered during construction, are designated contaminated stockpile areas identified and properly located away from storm drains, open ditches, or water bodies? (Reference Construction Activities BMP Field Manual C.28)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18.	Are Concrete Washout Facilities properly located at designated areas, clearly marked and properly constructed and protected? (Reference Construction Activities BMP Field Manual C.29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	a. Are Concrete Washout Facilities located 50-feet, minimum, away from storm drains, open ditches, or water bodies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	b. Identify Concrete Washout Facilities. Check all applicable.				
	i. Portable Bins (i.e. metal, plastic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	ii. Excavated pit or surrounded by earth berm with plastic lining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	iii. Other, be specific.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19.	Are Sanitary and Septic Waste Facilities located at designated areas and properly constructed? (Reference Construction Activities BMP Field Manual C.30)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	a. Are portable toilet facilities properly secured to prevent "tipping?"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	b. Are facilities located away from storm drains, open ditches, or water bodies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20.	Are Spill Kits available on-site at designated locations? (Reference Construction Activities BMP Field Manual C.31)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21.	Are Non-Stormwater Washout Facilities (i.e. paint, hand wash) located at designated areas, clearly marked, properly constructed and controlled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22.	Are discharge points and receiving waters free of any sediment deposits or other signs of illicit discharge?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23.	Other, be specific	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



INITIAL CONSTRUCTION INSPECTION CHECKLIST



<i>Description of Potential Non-Compliance:</i>				
<u>No.</u>	<u>Description</u>	<u>Photo No.</u>	<u>Deficiency Type</u>	<u>Follow-up Date</u>

Check box if:

☐

No incidents of potential non-compliance were found, and I certify that this inspection found this site to be in full compliance with both the Stormwater Management Program Plan and applicable permits. All items must be checked "Yes" to be considered in full compliance. *(Site is ready for construction to commence.)*

☐

Incidents of potential non-compliance were found and discussed with Site Manager. If any items were checked "No" then this box must be checked. Document any incidences of non-compliance with photograph(s) and description of the non-compliance(s). *(All non-compliance issues must be corrected and documented before construction is allowed to commence.)*

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print Name: _____

Signature: _____

Date: _____



INITIAL CONSTRUCTION INSPECTION CHECKLIST



INSPECTION PHOTOGRAPHS

Photo 1 Description:	Photo 2 Description:
Photo 3 Description:	Photo 4 Description:

Attachment H

SWPPP Amendment Log

INSTRUCTIONS

- *Include SWPPP Amendments here. All amendments are to be certified, signed, and dated by the HDOT Director or a previously approved Duly Authorized Representative and completed within 7 calendar days following the occurrence of any of the conditions listed below.*
- *Add a callout, note, highlight, or other identifier to amended sheets. Include the amendment number, date, and changes that were made.*

The SWPPP shall be amended when:

- ☐ New contractors become active in construction activities on the site;
- ☐ Changes are made to the construction plans, stormwater control measures, pollution prevention measures, or other activities at the site;
- ☐ Areas on the site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- ☐ Inspections or investigations by site staff, or by local, state, or federal officials determine that SWPPP modifications are necessary for compliance with the Project permit;
- ☐ DOH determines it is necessary to impose additional requirements on the discharge; and
- ☐ Revisions to applicable federal, state, and local requirements affect stormwater control measures implemented at the site.

No.	Amendment Description	Page Number(s)	Amendment Date
Amendment Certification			Certification Date
Name: _____ Signature: _____			

No.	Amendment Description	Page Number(s)	Amendment Date
Amendment Certification			Certification Date
Name: _____ Signature: _____			

No.	Amendment Description	Page Number(s)	Amendment Date
Amendment Certification			Certification Date
Name: _____ Signature: _____			

No.	Amendment Description	Page Number(s)	Amendment Date
Amendment Certification			Certification Date
Name: _____ Signature: _____			

No.	Amendment Description	Page Number(s)	Amendment Date
Amendment Certification			Certification Date
Name: _____ Signature: _____			

[Add rows as needed]